



July 21, 2005

U.S. Environmental Protection Agency  
1650 Arch Street  
Philadelphia, PA 19103  
Attention: Amy Cohen (3WP32)

Re: Mountaire Farms of Delaware, Inc.  
Order on Consent

Dear Ms. Cohen:

In accordance with paragraph 51 of the above-referenced Order on Consent, we are submitting the attached written progress report summarizing all actions taken as required by this Order ("Progress Report") for the 2<sup>nd</sup> quarter, 2005.

Additionally, with this submission and pursuant to paragraphs 38 and 39, the two-year monitoring and remediation program has been completed. During that time period, Mountaire Farms has complied with the requirements of the Order by: 1.) operating the wastewater treatment/spray irrigation systems in a manner which controls nitrogen loadings to the spray fields and insures that the annual average nitrate levels at the Facility are below 10 mg/l on any spray field (see attached "Wastewater Spray Irrigation-Nitrogen Balance Estimating Calculations" for 2003, 2004 and 2005 year-to-date); 2.) continued operation of Mountaire's irrigation and production wells in areas of elevated nitrate levels in order to reduce the overall nitrate levels at the Facility; and 3.) quarterly monitoring for a two year period, on a schedule approved by EPA, of existing wells numbered 35, 36, 37, 42, 43, 47 and one well which replaced monitoring well 38.

Therefore, as stated in Section IX, "Termination and Satisfaction", we believe the provisions of this Order have been satisfied and request EPA's written concurrence that the terms of this Order have been satisfactorily completed, thereby closing this matter.

If you have any questions or need additional information, please do not hesitate to contact Jeffrey Smith, Environmental Manager, at (302) 934-3094.



Mountaire Farms of Delaware, Inc.  
P.O. Box 1320, Millsboro, Delaware 19966  
(302) 934-1100 Toll Free (877) 887-1490

*"We measure quality by how well we service our internal and external customers"*

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to properly gather and evaluate information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

Sincerely,



Michael Tirrell  
Vice President of Operations

Cc: Edward Hallock (Delaware Dept. of Health & Social Services)  
Rodney Wyatt (Delaware Dept. of Natural Resources & Environmental Control)  
John Wren (Mountaire Farms)  
Jeff Smith (Mountaire Farms)  
Walter Moorhead (Mountaire Farms)  
Tom Miller (Mountaire Farms)  
Gordon Serman (Mountaire Farms)  
Jerry Homer (Parkowski, Guerke & Swayze)

**Quarterly Progress Report  
(Reference Paragraph 51 of Order)**

**2<sup>nd</sup> Quarter, 2003 (April-May-June):**

- Per paragraph 34, all residents identified by sampling of nitrates above 10 mg/l who have requested bottled water have received bottled water.
- Per paragraph 36, a plan to provide a permanent alternate water supply was submitted via certified mail on July 16, 2003 to EPA for review and approval, with copies to DNREC and DHSS.
- Per paragraph 38, the wastewater treatment/spray irrigation system is being operated in a manner to control nitrogen loadings to the spray fields; the production wells are in operation (no irrigation wells operated due to substantial precipitation during the time period); quarterly groundwater sampling in progress.
- Per paragraph 47, a copy of the Order was sent to the following contractors via certified mail:
  - o Envirocorp Inc (testing laboratory); Date of delivery 6-12-03
  - o Ex. 6 - Personal Privacy (bottled water supplier); Date of delivery 6-14-03
  - o well driller); Date of delivery 6-30-03
- Monitoring well #38 replacement installed on 6-25-03.

**3<sup>rd</sup> Quarter, 2003 (July-August-September)**

- Certified letters mailed to the following residents explaining the Order and requesting a meeting to discuss alternate water supply:

**Ex. 6 - Personal Privacy**

All letters received by the residents (copy of a sample letter and return receipts attached).

- Per paragraph 38, the wastewater treatment/spray irrigation system continues to be operated in a manner to control nitrogen loadings to the spray fields; the production wells are in operation and approximately 3.03 million gallons of groundwater was sprayed on the Cordrey Farm from the irrigation well located by spray field WHBJ 1; quarterly groundwater monitoring completed including the newly installed MW 38.

#### **4<sup>th</sup> Quarter, 2003 (October-November-December)**

- Meetings held with the following residents to explain the Order and the alternate water options. Acknowledgement letters left with residents (returned copies attached with their choice).
  - o [Ex. 6 - Personal Privacy] Meeting held with [Ex. 6 - Personal Privacy] on October 10, 2003 to arrange the meeting. [Ex. 6 - Personal Privacy] is planning on moving in the near future, does not want to pursue a well or treatment unit and prefers to continue with bottled water until he moves.
  - o [Ex. 6 - Personal Privacy] Meeting held with the [Ex. 6 - Personal Privacy] on October 13, 2003. Chose ion exchange treatment system.
  - o [Ex. 6 - Personal Privacy] Meeting held with the [Ex. 6 - Personal Privacy] on November 8, 2003. [Ex. 6 - Personal Privacy] stated he would not sign the letter and wants to remain on bottled water\*.
  - o [Ex. 6 - Personal Privacy] Meeting held with the [Ex. 6 - Personal Privacy] on October 24, 2003. Chose ion exchange treatment system.
  - o [Ex. 6 - Personal Privacy] Meeting held with the [Ex. 6 - Personal Privacy] on October 15, 2003. Chose to remain on bottled water\*.
  - o [Ex. 6 - Personal Privacy] Meeting held with [Ex. 6 - Personal Privacy] on November 11, 2003. Chose to remain on bottled water\*.
  - o [Ex. 6 - Personal Privacy] Meeting held with the [Ex. 6 - Personal Privacy] on October 15, 2003. Chose to remain on bottled water\*.

\* It should be noted that during the meetings with the residents, it was explained that bottled water was not considered by EPA to be a long-term alternate source of water. However, several residents expressed their desire to remain on bottled water and were advised that EPA would probably be contacting them regarding this issue. Therefore, Mountaire is holding off on scheduling the installation of the two ion exchange units should the residents wanting bottled water change their minds after being contacted by EPA.

- Per paragraph 38, the wastewater treatment/spray irrigation system continues to be operated in a manner to control nitrogen loadings to the spray fields; the production wells are in operation, however, no irrigation wells were operated during the this quarter due to crop harvest and substantial precipitation; quarterly groundwater monitoring completed.

## 1<sup>st</sup> Quarter, 2004 (January-February-March)

- Ion exchange units installed and operational at the following residences.

- Ex. 6 - Personal Privacy (March 17, 2004)
  - Ex. 6 - Personal Privacy (March 17, 2004)
  - Ex. 6 - Personal Privacy (March 19, 2004)

- On March 23, 2004, drinking water samples were obtained from the three residences with the following results (analyses attached):

- Ex. 6 - Personal Privacy <1.0 ppm Nitrate as N
  - Ex. 6 - Personal Privacy 1.48 ppm Nitrate as N
  - Ex. 6 - Personal Privacy ~ 18.1 ppm Nitrate as N\*\*

\*\* As a result of the nitrate levels in the treated water at the residence, Mountaire had the contractor (Ex. 6 - Personal Privacy) return to the (Ex. 6 - Personal Privacy) to determine the cause of the elevated reading. (Ex. 6 - Personal Privacy) determined that the piping under the house was not installed properly and corrected the piping. The (Ex. 6 - Personal Privacy) water was re-sampled on April 2, 2004 and verbal results from the lab (Envirocorp) showed a nitrate level of 2.53 ppm Nitrate as N. Hard copy of this analysis will accompany the 2<sup>nd</sup> quarter report.

- Per paragraph 38, the wastewater treatment/spray irrigation system continues to be operated in a manner to control nitrogen loadings to the spray fields; the production wells are in operation, however, no irrigation wells were operated during this quarter due to sufficient precipitation for the cover crops planted; quarterly groundwater monitoring completed.

## 2<sup>nd</sup> Quarter, 2004 (April, May, June)

- (Ex. 6 - Personal Privacy) analysis of the (Ex. 6 - Personal Privacy) residence attached.
- In response to Deane Bartlett's letter of March 4, 2004 to Jeremy Homer regarding the addition of salt to the ion exchange units, Mountaire mailed letters to the residents (copy attached) offering to have the contractor add salt to their systems during delivery if they so desired. Mountaire received letters back from (Ex. 6 - Personal Privacy) accepting this offer. (Ex. 6 - Personal Privacy) Water will contact the residents prior to delivery to ensure someone is home to allow access to the system.
- Per paragraph 38, the wastewater treatment/spray irrigation system continues to be operated in a manner to control nitrogen loadings to the spray fields; the production wells were in operation and 7.7 million gallons of groundwater was sprayed on fields WHBJ 5, 6 and the Cordrey Farm; quarterly groundwater monitoring completed.

### **3<sup>rd</sup> Quarter, 2004 (July, August, September)**

- Residents receiving replacement salt for their ion exchange units as necessary.
- Per paragraph 38, the wastewater treatment/spray irrigation system continues to be operated in a manner to control nitrogen loadings to the spray fields; one production well was in operation and 12.875 million gallons of groundwater was sprayed on fields WHBJ 5, 6 and the Cordrey Farm; quarterly groundwater monitoring completed.

### **4<sup>th</sup> Quarter, 2004 (October, November, December)**

- Residents continue to receive replacement salt for their ion exchange units as necessary.
- Per paragraph 38, the wastewater treatment/spray irrigation system continues to be operated in a manner to control nitrogen loadings to the spray fields; the production wells are in operation however no irrigation wells were operated during this quarter due to harvesting operations and cover crop planting; quarterly groundwater monitoring completed.
- It was noted in December that the [Ex. 6 - Personal Privacy] residence was vacant. [Ex. 6 - Personal Privacy] was contacted and confirmed that he has moved from the property with no intentions of returning, therefore bottled water delivery has been discontinued.

### **1<sup>st</sup> Quarter, 2005 (January, February, March)**

- Residents continue to receive replacement salt for their ion exchange units as necessary.
- Per paragraph 38, the wastewater treatment/spray irrigation system continues to be operated in a manner to control nitrogen loadings to the spray fields; the production wells are in operation however no irrigation wells were operated during this quarter due to sufficient precipitation to the fields; all spray irrigation fields had cover crops established (winter wheat and barley); quarterly groundwater monitoring completed.

### **2<sup>nd</sup> Quarter, 2005 (April, May, June)**

- Residents continue to receive replacement salt for their ion exchange units as necessary.
- Per paragraph 38, the wastewater treatment/spray irrigation system continues to be operated in a manner to control nitrogen loadings to the spray fields; the production wells are in operation however no irrigation wells were operated during this quarter due to sufficient precipitation to the fields; all spray irrigation fields planted in corn or soybeans and crops well established; quarterly groundwater monitoring completed.



**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3A

YEAR: 2005

Field(s) Acreage

29.81 (Watered acres)

0.5 inch/week =	402,015 gallons/week =	1,722,921 gallons/month (based on 30 day month)
1 inch/week =	804,030 gallons/week =	3,445,843 gallons/month (based on 30 day month)
1.5 inch/week =	1,206,045 gallons/week =	5,169,764 gallons/month (based on 30 day month)
2 inch/week =	1,608,060 gallons/week =	6,881,685 gallons/month (based on 30 day month)
2.5 inch/week =	2,010,075 gallons/week =	8,614,807 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff Application Rate (mg/l)	0	1,633.2	1,738.1	2.41	1,245.3	1,500.4	2,027.3	6	3	2	2.5	1.9
WW Eff. Million Gallons/month	0	0	0	0	0	0	0	0	0	0	0	27,954.3
Application rate (inches/week)	2.03	2.16	3.00	1.55	1.87	2.52	7.46	3.73	2.49	2.49	3.11	2.36
WWTP Effluent N												
Ammonia N (mg/l)	12,015	32.7	34.55	63.95	27.75	22.35	30	30	30	30	30	30
Organic N (mg/l)	2,685	4.7	2.4	6.8	5.55	3.15	2.5	2.5	2.5	2.5	2.5	2.5
Nitrate N (mg/l)	0.05	0.07	0.074	0.305	0.4	0.4	2.5	2.5	2.5	2.5	2.5	2.5
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	14.75	37.47	37,024	71,055	33.7	25.9	35	35	35	35	35	35
WW Reductions												
Ammonia after Volatiz.	0.95	11.4	31.1	32.8	60.8	26.4	21.2	28.5	28.5	28.5	28.5	28.5
TN after Denitrification	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5	28.5	28.5	28.5	28.5
TN (lbs)	184	442	603	598	344	344	1,425	712	475	475	584	451
Irrigation Water												
Flow (MG/month)	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0.13	0.13	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	6	6	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	6.23	6.23	0	0	0
Irr W. Reductions												
Ammonia after Volatiz.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0	0	0
TN after Denitrification	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	5.3	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	110	79	-	-	-
Additions and Uptake												
TN WW + Irr W. (lbs/acre)	5.5	14.9	20.4	20.2	11.6	12.0	51.8	28.7	16.0	16.0	20.1	15.2
TN from fertilizers (lbs/acre)	0	5.5	14.9	20.4	23.2	30	7	5	3	-	-	-
TN for crisp uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Bailey Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	150	0	0	0	20	35	40	45	25	10	0	0
Corn/Soybeans Uptake (lbs/acre)	6.5	14.9	12.4	3.2	12.8	-	11.8	4.7	6.0	9.0	12.1	13.2
Percolate												
Precip (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.67
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec. + Irr -PET Percolate (in/mo)	5.9	5.8	8.0	2.2	5.7	2.0	6.2	4.2	2.7	4.0	5.5	5.8
Irrigation Water (in/mo)	5.9	5.8	8.0	2.2	5.7	-	3.1	2.2	1	-	-	-
Total Water (in/mo)	1.34	1.30	1.81	0.51	1.28	0.46	2.10	1.45	0.80	0.91	1.25	1.32
Percolate (M3/acre)												
Percolate TN (ppm = mg/l)	4.1	11.4	6.8	6.3	9.8	-	5.6	3.3	10.0	10.0	9.6	10.0
												7.3

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3B

YEAR: 2005

Field(s) Acreage  
70.46 (Wetted acres)

0.5 inch/week =	959,835 gallons/week =	4,069,886 gallons/month (based on 30 day month)
1 inch/week =	1,913,271 gallons/week =	8,188,732 gallons/month (based on 30 day month)
1.5 inch/week =	2,868,906 gallons/week =	12,288,588 gallons/month (based on 30 day month)
2 inch/week =	3,826,542 gallons/week =	16,398,484 gallons/month (based on 30 day month)
2.5 inch/week =	4,783,177 gallons/week =	20,499,330 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/l)	0	4,5501	4,2891	6,0883	4,2032	4,0548	4,8231	8	9.9	5.1	4.5	7
Million Gallons/month												6.6
Application rate (inches/week)		2.38	2.24	3.17	2.20	2.12	0.85	4.70	5.17	2.87	2.35	3.45
WWTP Effluent N												67,0886
Ammonia N (mg/l)	0	12,015	32.7	34.55	63.85	27.75	22.35	30	30	30	30	30
Organic N (mg/l)	0	2,685	4.7	2.4	6.8	5.55	3.15	2.5	2.5	2.5	2.5	2.5
Nitrate N (mg/l)	0	0.05	0.07	0.074	0.305	0.4	0.4	2.5	2.5	2.5	2.5	2.5
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	14.75	37.47	37,024	71,055	33.7	25.9	35	35	35	35	35
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	11.4	31.1	32.8	60.8	28.4	21.2	28.5	28.5	28.5	28.5	28.5
TN after Denitrification (mg/l)	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5	28.5	28.5	28.5	28.5
TN (lbs)	456	1,090	1,518	2,022	929	320	2,137	2,351	1,211	1,069	1,062	1,587
Irrigation Water												18,333
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0.1	0.1	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0.13	0.13	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0.6	0.6	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0.23	0.23	0	0	0
Irr. W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	101	66	-	-	-
Additions and Uptake												
TN WW + Irr. W. (lbs/acre)												
TN for fertilizers (lbs/acre)	0	6.5	15.5	21.5	28.7	13.2	4.5	31.8	34.3	17.2	15.2	22.2
TN for crop uptake (lbs/acre)	0	6.5	15.5	21.5	31.7	19.2	12.5	36.8	37.3	17.2	15.2	259.2
Bailey Uptake (lbs/acre)	8	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	7	10	8
Com/Soybeans Uptake (lbs/acre)	150	0	0	0	10	17	33	50	29	11	0	0
TN to percolate (lbs/acre)	6.5	15.5	13.5	21.7	22	-	-	8.3	6.2	8.2	13.6	14.2
Percolate												
Precip (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.67
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec + Irr. PET Percolate (in/mo)	6.3	5.8	8.2	2.9	5.9	0.5	3.4	5.6	2.8	3.9	6.1	6.9
Irrigation Water (in/mo)	6.3	5.8	8.2	2.9	5.9	0.5	1.2	0.8	0.8	-	-	-
Total Water (in/mo)	1.42	1.32	1.85	0.66	1.34	0.10	1.04	1.45	0.64	0.88	1.38	1.57
Percolate (ft/acre)												
Percolate TN (ppm = mg/l)	4.6	11.7	7.3	33.1	1.0	-	-	5.7	9.6	9.3	9.9	9.1

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3C

YEAR: 2005

Field(s) Acreage  
79.5 (Wetted acres)

0.5 inch/week =	1,079,372 gallons/week =	4,625,878 gallons/month (based on 30 day month)
1 inch/week =	2,158,743 gallons/week =	9,251,756 gallons/month (based on 30 day month)
1.5 inch/week =	3,238,115 gallons/week =	13,677,634 gallons/month (based on 30 day month)
2 inch/week =	4,317,486 gallons/week =	18,503,511 gallons/month (based on 30 day month)
2.5 inch/week =	5,396,858 gallons/week =	23,128,359 gallons/month (based on 30 day month)

MONTH	Days	JUN	JUL	AUG	SEP	OCT	NOV	DEC
WW Eff. Application Rate (mg/l)	0	5,488.7	4,634.5	6,088.3	4,413.1	2,801.7	6.8	5
Million Gallons/month								69,988
Application rate (inches/month)								
WWTP Effluent N								
Ammonia N (mg/l)	0	12.015	32.7	34.55	63.95	27.75	22.35	30
Organic N (mg/l)	0	2.885	4.7	2.4	8.8	5.55	3.15	2.32
Nitrate N (mg/l)	0.05	0.07	0.074	0.305	0.4	0.4	2.5	2.5
Nitrite N (mg/l)	0	0	0	0	0	0	0	0
Total N (mg/l)	0	14.75	37.47	37.024	71.055	33.7	26.9	35
WW Reductions								
Ammonia after Volatiz.	0.95	11.4	31.1	32.8	60.8	26.4	21.2	28.5
TN after Denitrification	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5
TN (lbs)	549	1,177	1,518	2,123	1,004	492	1,615	1,876
Irrigation Water								
Flow (MG/month)	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0.1	0
Organic N (mg/l)	0.0	0	0	0	0	0	0.13	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	6	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0
Irr W. Reductions								
Ammonia after Volatiz.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
TN after Denitrification	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
TN (lbs)	-	-	-	-	-	-	104	-
Additions and Update								
TN WW + Irr W. (lbs/acre)	8.9	14.8	19.1	26.7	12.6	6.2	21.6	24.6
TN for plant down (lbs/acre)	-	-	-	-	-	6	5	5
TN from fertilizers (lbs/acre)	6.9	14.8	19.1	29.7	18.6	14.2	26.8	27.6
TN for crop uptake (lbs/acre)	0	0	0	0	0	0	0	0
Bailey Uptake (lbs/acre)	8	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	25	0	0	0	0	0	0	0
Com/Soybeans Uptake (lbs/acre)	150	0	0	18	17	25	50	29
TN to percolate (lbs/acre)	6.9	14.8	11.1	11.7	1.6	-	-	3.9
Percolate								
Precip (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90
Prec + Ir-PET Percolate (in/mo)	6.4	5.7	7.8	2.7	5.8	0.8	1.8	2.5
Irrigation Water (in/mo)	-	-	-	-	-	-	1.1	0.6
Total Water (in/mo)	8.4	5.7	7.8	2.7	5.8	0.8	2.9	2.5
Percolate (lbs/acre)	1.48	1.30	1.77	0.62	1.32	0.18	0.88	1.12
Percolate TN (ppm = mg/l)	4.7	11.4	6.3	18.6	1.2	-	-	7.0
								14.9
								10.7
								6.2
								6.8

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3D-EAST

YEAR: 2005

Field(s) Acreage 40 (Wetted acres)

0.5 inch/week =	543,080 gallons/week =	2,327,486 gallons/month (based on 30 day month)
1 inch/week =	1,088,160 gallons/week =	4,654,971 gallons/month (based on 30 day month)
1.5 inch/week =	1,632,240 gallons/week =	6,982,457 gallons/month (based on 30 day month)
2 inch/week =	2,177,320 gallons/week =	8,359,943 gallons/month (based on 30 day month)
2.5 inch/week =	2,715,400 gallons/week =	11,837,428 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/l)	0	0	0	2,302	2,3798	0	8.8	4.8	2.8	2.55	3.8	2.45
Million Gallons/month												29,7819
Application rate (Inches/week)				2.12	2.19		8.18	4.24	2.58	2.35	3.50	2.28
WWTP Effluent N												
Ammonia N (mg/l)	0	12,015	32.7	34.55	63.95	27.75	22.35	30	30	30	30	30
Organic N (mg/l)	0	2,885	4.7	2.4	6.8	5.55	3.15	2.5	2.5	2.5	2.5	2.5
Nitrate N (mg/l)	0	0.05	0.074	0.305	0.4	0.4	2.5	2.5	2.5	2.5	2.5	2.5
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	14.75	37.47	37.024	71.055	33.7	25.9	35	35	35	35	35
WW Reductions												
Ammonia after Volatiz.	0.95	11.4	31.1	32.8	60.8	26.4	21.2	28.5	28.5	28.5	28.5	28.5
TN after Denitrification	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5	28.5	28.5	28.5	28.5
TN (lbs)					1,107	545		2,114	1,092	685	696	902
Irrigation Water												
Flow (MG/month)		0	0	0	0	0	0	2.5	1.6	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0.1	0.1	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0.13	0.13	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	6	6	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	6.23	6.23	0	0	0
Ir. W. Reductions												
Ammonia after Volatiz.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
TN after Denitrification	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.13	0.0	0.0	0.0
TN (lbs)								110	71	-	-	-
Additions and Uptake												
TN WW + Ir. W. (lbs/acre)												
TN from fertilizers (lbs/acre)												
TN for plow down (lbs/acre)												
Bailey Uptake (lbs/acre)	8	0	0	8	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	7	10	8
Corn/Soybeans Uptake (lbs/acre)	150	0	0	20	17	33	40	29	11	0	0	0
TN to percolate (lbs/acre)												
Percolate												
7.1 rain (in/mo)	4.00	3.70	4.25	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.87
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.80	3.60	1.90	0.90	0.20
Prec. + Ir.-PET Percolate (in/mo)	3.9	3.6	3.6	2.8	6.0	(0.5)	6.9	4.7	2.7	3.9	5.8	5.7
Irrigation Water (in/mo)												
Total Water (in/mo)	3.9	3.6	3.6	2.8	6.0	(0.5)	9.2	6.1	2.7	3.9	5.9	5.7
Percolate (lbs/acre)	0.86	0.82	0.80	0.84	1.38	(0.11)	2.08	1.38	0.62	0.88	1.34	1.30
Percolate TN (ppm = mg/l)	-	-	-	16.7	1.9	-	9.9	2.2	9.0	9.3	9.4	5.0
												5.3

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3DWEST

YEAR: 2005

38.2 (Wetted acres)

**Field(s) Acreage**

0.5 inch/week =	532.218 gallons/week =	2,260,836 gallons/month (based on 30 day month)
1 inch/week =	1,064.437 gallons/week =	4,561,872 gallons/month (based on 30 day month)
1.5 inch/week =	1,598.655 gallons/week =	8,842,808 gallons/month (based on 30 day month)
2 inch/week =	2,126.874 gallons/week =	9,123,744 gallons/month (based on 30 day month)
2.5 inch/week =	2,661,092 gallons/week =	11,404,880 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/l)	0	3,5554	2,8869	1,4784	0.5009	1,6222	2,5385	7.5	3.2	2.5	2.5	3
Million Gallons/month												33,7834
Application rate (inches/week)												
WWTP Effluent N												
Ammonia N (mg/l)	0	12,015	327	34.55	63.95	27.75	22.35	30	30	30	30	30
Organic N (mg/l)	0	2,865	4.7	2.4	6.8	5.55	3.15	2.5	2.5	2.5	2.5	2.5
Nitrate N (mg/l)	0	0.05	0.07	0.074	0.305	0.4	0.4	2.5	2.5	2.5	2.5	2.5
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	14.75	37.47	37,024	71,065	33.7	25.9	35	35	35	35	35
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	11.4	31.1	32.6	60.6	26.4	21.2	28.5	28.5	28.5	28.5	28.5
TN after Denitrification (mg/l)	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5	28.5	28.5	28.5	28.5
TN (lbs)	357	727	370	245	376	446	1,761	760	594	594	594	594
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0.8	1.9	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0.1	0.1	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0.13	0.13	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	6	6	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
IRR W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	40	84	-	-	-
Additions and Uptake												
TN WW + Irr. W. (lb/acre)												
TN from fertilizers (lb/acre)	0	9.1	18.5	9.4	6.2	9.6	11.4	46.4	21.5	15.1	15.1	15.1
TN for crop uptake (lb/acre)												
Bailey Uptake (lb/acre)	25	9.1	18.5	9.4	3	6	8	5	3	-	-	-
Wheat Uptake (lb/acre)	0	0	0	0	12.2	12.2	10	10	-	-	-	-
Com/Soybeans Uptake (lb/acre)	150	0	0	0	0	0	0	0	0	0	0	0
TN to percolate (lb/acre)	9.1	18.5	1.4	2.2	11.8	-	11.4	-	4.1	8.1	10.2	13.1
Percolate												
Precip (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.67
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.80	1.90	0.90	0.20
Prec. + Irr + PET Percolate (in/mo)	7.2	6.3	6.4	1.2	5.3	1.9	5.7	3.4	2.5	3.9	5.2	5.6
Irrigation Water (in/mo)	-	-	-	-	-	-	-	0.6	1.8	-	-	-
Total Water (in/mo)	7.2	6.3	6.4	1.2	5.3	1.9	6.6	5.2	2.5	3.9	5.2	5.6
Percolate (lb/acre)	1.64	1.42	1.45	0.27	1.21	0.43	1.49	1.18	0.57	0.88	1.19	1.32
Percolate TN (ppm ± mg/l)	5.5	13.0	1.0	8.4	9.8	-	7.7	-	7.3	9.3	8.6	10.0

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHBJ1

Field(s) Acreage      YEAR: 2005

Field(s) Acreage      54.53 (Wetted acres)

0.5 inch/week =	740,354 gallons/week =	3,172,945 gallons/month (based on 30 day month)
1 inch/week =	1,480,708 gallons/week =	6,345,880 gallons/month (based on 30 day month)
1.5 inch/week =	2,221,061 gallons/week =	8,518,835 gallons/month (based on 30 day month)
2 inch/week =	2,981,415 gallons/week =	12,681,780 gallons/month (based on 30 day month)
2.5 inch/week =	3,701,769 gallons/week =	15,884,725 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/l)	0	2,1477	2,3585	2,1904	1,4411	2,6798	2,5385	8.5	5.5	3.8	4.5	8.5
Million Gallons/month												45,456
Application rate (Inches/week)												
WWTP Effluent N												
Ammonia N (mg/l)	0	12,015	32.7	34.55	63.95	27.75	22.35	30	30	30	30	30
Organic N (mg/l)	0	2,685	4.7	2.4	8.8	5.55	3.15	2.5	2.5	2.5	2.5	2.5
Nitrate N (mg/l)	0	0.05	0.07	0.074	0.305	0.4	0.4	2.5	2.5	2.5	2.5	2.5
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	14.75	37.47	37.024	71,055	33.7	25.8	35	35	35	35	35
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	11.4	31.1	32.6	60.8	26.4	21.2	28.5	28.5	28.5	28.5	28.5
TN after Denitrification (mg/l)	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5	28.5	28.5	28.5	28.5
TN (lbs)	215	598	548	693	614	446	1,544	1,306	926	1,069	2,019	760
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	2.5	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0.13	0.13	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0.47	0.47	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	17.5	17.5	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irri. W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	15.4	0.0	0.0	0.0
TN (lbs)	.	.	.	.	.	.	.	321	321	.	.	.
Additions and Uptake												
TN (W+N + Irri. W) (lbs/acre)	4.0	11.0	10.1	12.7	11.3	8.2	34.2	29.8	17.0	19.6	37.0	13.9
TN for flow down (lbs/acre)	.	.	.	3	6	6	5	3	.	.	.	.
TN from fertilizers (lbs/acre)	0	4.0	11.0	10.1	15.7	29.3	16.2	21	17.0	19.6	37.0	13.9
TN for crop uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	7	8	2
Barley Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	47	0	0	0	0	0	0	0	0	0	0	0
Com/Soybeans Uptake (lbs/acre)	150	0	0	0	15	17	33	50	24	11	0	0
TN to percolate (lbs/acre)	4.0	11.0	2.1	0.7	12.3	-	10.2	6.6	6.0	12.6	29.0	11.9
Percolate												
Precip (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.67
PEI (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.80	1.90	0.90	0.20
Prec + Irr. PET Percolate (in/mo)	5.4	5.2	6.5	1.7	5.6	1.2	3.1	4.2	2.8	4.6	8.2	5.6
Irrigation Water (in/mo)	5.4	5.2	6.5	1.7	5.6	1.2	1.7	1.7	1.7	-	-	-
Total Water (in/mo)	5.4	5.2	6.5	1.7	5.6	1.2	4.8	5.8	2.8	4.6	8.2	5.6
Percolate (Mlb/acre)	1.21	1.18	1.47	0.38	1.27	0.27	1.08	1.32	0.83	1.03	1.85	1.28
Percolate TN (ppm = mg/l)	3.3	9.3	1.4	1.9	9.6	-	9.4	8.7	9.4	12.2	15.7	9.4

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WH-B2  
YEAR: 2005  
Field(s) Acreage: 65.5 (Wetted acres)

0.5 inch/week = 889.264 gallons/week = 3,811,256 gallons/month (based on 30 day month)  
 1 inch/week = 1,778.537 gallons/week = 7,622,516 gallons/month (based on 30 day month)  
 1.5 inch/week = 2,667.881 gallons/week = 11,433,774 gallons/month (based on 30 day month)  
 2 inch/week = 3,557.174 gallons/week = 15,235,031 gallons/month (based on 30 day month)  
 2.5 inch/week = 4,446.468 gallons/week = 19,058,289 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/l)	0	1,9538	2,9258	2,5117	1,2709	1,9702	4,6125	9.5	8.8	3.9	4	3.8
Million Gallons/month												2.5
Application rate (inches/week)												47.7445
WWTP Effluent N												
Ammonia N (mg/l)	0	12,015	32.7	34.55	63.85	27.75	22.35	30	30	30	30	30
Organic N (mg/l)	0	2,685	4.7	2.4	6.8	5.55	3.15	2.5	2.5	2.5	2.5	2.5
Nitrate N (mg/l)	0	0.05	0.07	0.035	0.4	0.4	0.4	2.5	2.5	2.5	2.5	2.5
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	14.75	37.47	37,024	71,055	33.7	25.9	35	35	35	35	35
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	11.4	31.1	32.8	60.8	26.4	21.2	28.5	28.5	28.5	28.5	28.5
TN after Denitrification (mg/l)	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5	28.5	28.5	28.5	28.5
TN (lbs)	198	743	628	611	451	810	2,258	2,090	926	950	902	594
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0	0	0	0	0	0	0	2.3	2.4	0	0	0
Organic N (mg/l)	0	0	0	0	0	0	0	0.13	0	0	0	0
Nitrate N (mg/l)	0	0	0	0	0	0	0	0.47	0.47	0	0	0
Nitrite N (mg/l)	0	0	0	0	0	0	0	17.5	17.5	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr. W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	15.4	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	295	308	-	-	-
Additions and Uptake												
TN WW + Irr. W. (lbs/acre)												
TN for plow down (lbs/acre)	3.0	11.3	9.6	9.3	6.9	12.4	38.9	38.6	14.1	14.5	13.6	9.1
TN from fertilizers (lbs/acre)	0	3.0	11.3	9.6	12.3	15	6	5	5	3.1	7.5	7.1
TN for crop uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Barley Uptake (lbs/acre)	26	0	0	0	0	0	0	0	0	7	8	2
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Com/Soybeans Uptake (lbs/acre)	150	0	0	0	10	17	33	50	29	11	0	0
TN to percolate (lbs/acre)	3.0	11.3	1.6	2.3	10.9	-	-	10.6	3.1	7.5	5.8	7.1
Percolate												
Precip. (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.67
PEI (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec + Ir. -PET Percolate (in/mo)	5.0	5.2	6.4	1.4	4.9	2.1	4.0	5.4	2.4	3.8	4.6	4.9
Irrigation Water (in/mo)	5.0	5.2	6.4	1.4	4.9	2.1	4.0	5.4	2.4	3.8	4.6	4.9
Total Water (in/mo)	5.0	5.2	6.4	1.4	4.9	2.1	4.0	5.4	2.4	3.8	4.6	4.9
Percolate (Mil/face)	1.13	1.13	1.19	1.45	0.32	1.11	0.47	1.21	1.53	0.54	0.85	1.10
Percolate TN (ppm = mg/l)	2.6	9.8	1.1	7.3	9.8	-	-	7.0	5.9	8.8	5.6	6.4
												5.3

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHB-3

YEAR: 2005

Field(s) Acreage

74

(Wetted acres)

0.5 inchiweek = 1,004,998 gallons/week = 4,305,840 gallons/month (based on 30 day month)  
 1 inchiweek = 2,009,396 gallons/week = 8,611,687 gallons/month (based on 30 day month)  
 1.5 inchiweek = 3,014,094 gallons/week = 12,917,545 gallons/month (based on 30 day month)  
 2 inchiweek = 4,018,792 gallons/week = 17,223,394 gallons/month (based on 30 day month)  
 2.5 inchiweek = 5,023,490 gallons/week = 21,528,243 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mgd)	0											
Million Gallons/month	3,7742	3,8422	3,9029	3,9624	3,5379	3,8032	8.2	8.5	5.2	4.9	5	3.9
Application rate (inches/week)												
WWTP Effluent N												
Ammonia N (mg/l)	12.015	32.7	34.55	63.95	27.75	30	30	30	30	30	30	30
Organic N (mg/l)	0	2.885	4.7	2.4	8.8	5.5	2.5	2.5	2.5	2.5	2.5	2.5
Nitrate N (mg/l)	0	0.05	0.07	0.036	0.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	14.75	37.47	37.024	71.055	33.7	35	35	35	35	35	35
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	11.4	31.1	32.8	60.8	26.4	28.5	28.5	28.5	28.5	28.5	28.5
TN after Denitrification (mg/l)	0.85	12.0	30.5	30.0	57.7	27.5	28.5	28.5	28.5	28.5	28.5	28.5
TN (lbs)	379	925	826	1,745	810	803	2,185	2,019	1,235	1,164	1,187	926
Irrigation Water												
Flow (MG/month)	0	0	0	0	0	0	0	2.5	2.5	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0.13	0.13	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0.47	0.47	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	17.5	17.5	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	18.1	18.1	0	0	0
Irri. W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	15.4	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	321	321	-	-	-
Additions and Uptake												
TN WW + Irri. W. (lbs/acre)	5.1	12.5	11.2	23.6	11.0	12.2	33.9	31.8	16.7	15.7	16.0	12.5
TN from fertilizers (lbs/acre)	0	-	-	3	8	12	5	5	-	-	-	-
TN for plow down (lbs/acre)	51	12.5	11.2	26.6	29.0	20.2	38.9	34.6	16.7	15.7	16.0	12.5
TN for crop uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	7	8	2
Barley Uptake (lbs/acre)	17	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	0	0	0	0	20	17	33	40	29	11	0	0
Corn/Soybeans Uptake (lbs/acre)	150	0	0	0	0	0	-	-	5.6	5.7	8.7	8.0
TN to percolate (lbs/acre)	5.1	12.5	11.2	6.6	12.0	-	-	-	-	-	-	-
Percolate												
Precip (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.67
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.80	0.20
Prec. + Irr. - PET Percolate (in/mo)	5.8	5.4	6.0	2.5	5.6	1.4	3.3	4.7	2.8	4.0	4.9	5.4
Irrigation Water (in/mo)	5.8	5.4	6.6	2.5	5.6	1.4	4.5	5.9	2.8	4.0	4.9	5.4
Total Water (in/mo)	1.31	1.23	1.50	0.57	1.28	0.32	1.02	1.34	0.62	0.90	1.11	1.23
Percolate (lb/acre)												
Percolate TN (ppm = mg/l)	3.9	10.2	7.4	11.6	9.5	-	-	4.2	9.1	9.7	7.2	8.6

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: W-H-B4

YEAR: 2005

Field(s) Acreage 92.06 (Watered acres)

**Field(s) Acreage**

0.5 inch/week = 1,249,899 gallons/week = 5,358,708 gallons/month (based on 30 day month)  
 1 inch/week = 2,499,787 gallons/week = 10,713,411 gallons/month (based on 30 day month)  
 1.5 inch/week = 3,749,696 gallons/week = 16,070,125 gallons/month (based on 30 day month)  
 2 inch/week = 4,999,594 gallons/week = 21,428,833 gallons/month (based on 30 day month)  
 2.5 inch/week = 6,249,493 gallons/week = 26,785,542 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mgd)	0	6,8384	5,6844	4,5178	3,9714	3,2503	3,0835	2,9	2,5	2,5	2,5	3,4
Million Gallons/month												B3,4238
Application rate (Inches/week)												
WWTP Effluent N												
Ammonia N (mg/l)	0	12,015	32.7	34.55	63.95	27.75	22.35	30	30	30	30	30
Organic N (mg/l)	0	4.7	2.4	9.8	5.55	3.15	2.5	2.5	2.5	2.5	2.5	2.5
Nitrate N (mg/l)	0	0.05	0.07	0.074	0.06	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	14.75	37.47	37.024	71,065	33.7	25.9	35	35	35	35	35
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	11.4	31.1	32.8	60.8	26.4	21.2	28.5	28.5	28.5	28.5	28.5
TN after Denitrification (mg/l)	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5	28.5	28.5	28.5	28.5
TN (lbs)	686	1,439	1,130	1,910	745	700	2,351	1,544	1,282	594	1,781	807
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.13	0.13	0.13	0.13
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.47	0.47	0.47	0.47	0.47
TN (lbs)	-	-	-	-	-	-	-	321	321	321	321	321
Additions and Uptake												
TN (WV + Ir/W) (lbs/acre)												
TN for fertilizer (lbs/acre)	7.4	15.6	12.3	20.8	8.1	7.6	29.0	20.3	13.9	6.4	19.3	8.8
TN for crop uptake (lbs/acre)												
Barley Uptake (lbs/acre)	7.4	15.6	12.3	23.6	6	14	34.0	23.3	13.9	6.4	19.3	8.8
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	25	0	0	0	20	17	33	40	29	11	7	10
TN to percolate (lbs/acre)	7.4	15.6	4.3	3.8	11.1	-	-	-	2.9	-	0	0
Percolate												
Precip (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.67
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec.+Irr. PET Percolate (in/mo)	6.6	5.9	6.8	2.3	5.1	1.1	2.7	3.0	2.3	2.5	5.4	4.8
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-
Total Water (in/mo)	6.6	5.9	6.8	2.3	5.1	1.1	3.7	4.0	2.3	2.5	5.4	4.8
Percolate (M/acre)	150	150	1,33	1,54	0.52	1.15	0.25	0.83	0.91	0.53	0.57	1.09
Percolate TN (ppm = mg/l)	5.0	11.8	2.8	7.2	9.8	-	-	-	5.6	-	7.6	0.7
												4.2

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WH-B5

YEAR: 2006

Field(s) Acreage 86.53 (Wetted acres)

0.5 inch/week =	944,009 gallons/week =	4,045,752 gallons/month (based on 30 day month)
1 inch/week =	1,888,018 gallons/week =	8,091,504 gallons/month (based on 30 day month)
1.5 inch/week =	2,832,028 gallons/week =	12,137,256 gallons/month (based on 30 day month)
2 inch/week =	3,778,035 gallons/week =	16,183,008 gallons/month (based on 30 day month)
2.5 inch/week =	4,720,044 gallons/week =	20,228,760 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/l)	0											
Million Gallons/month	0											
Application rate (inches/month)												
WWTP Effluent N												
Ammonia N (mg/l)	0											
Organic N (mg/l)	0											
Nitrate N (mg/l)	0											
Nitrite N (mg/l)	0											
Total N (mg/l)	0											
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	11.4	31.1	32.8	60.8	26.4	21.2	28.5	28.5	28.5	28.5	28.5
TN after Denitrification (mg/l)	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5	28.5	28.5	28.5	28.5
TN (lbs)	374	879	93	2,382	500	345	-	1,876	1,544	1,306	1,425	974
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	2.5	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	1	1	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	9	9	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	12	12	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Ir W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	18.7	0.0	18.7	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	389	369	-	-	-
Additions and Update												
TN WW + Ir W. (lbs/acre)	5.4	12.6	1.3	34.3	7.2	5.0	5.6	32.6	22.2	18.8	20.5	14.0
TN from fertilizers (lbs/acre)	50	-	-	-	-	-	-	-	-	-	-	-
TN for crop uptake (lbs/acre)	5.4	12.6	1.3	44.3	12.2	15.0	17.6	45.6	22.2	18.8	20.5	14.0
Barley Uptake (lbs/acre)	17	0	0	0	0	0	0	0	0	7	8	2
Wheat Uptake (lbs/acre)	47	0	0	10	23	14	0	0	0	0	0	0
Com/Soybeans Uptake (lbs/acre)	153	0	0	0	20	10	26	30	37	16	15	0
TN to percolate (lbs/acre)	5.4	12.6	-	1.3	-	-	-	8.6	8.2	-	12.5	12.0
Percolate												
Precip (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.67
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec + Ir -PET Percolate (in/mo)	5.9	5.4	5.2	3.3	5.0	0.5	(1.3)	4.6	3.6	4.4	5.6	5.6
Irrigation Water (in/mo)	-	-	-	-	-	-	1.3	1.3	-	-	-	-
Total Water (in/mo)	5.9	5.4	5.2	3.3	5.0	0.5	0.0	5.9	3.6	4.4	5.6	5.6
Percolate (Mlb/acre)	1.33	1.23	1.18	0.75	1.12	0.12	0.00	1.35	0.62	1.00	1.27	1.28
Percolate TN (ppm = mg/l)	4.0	10.3	-	1.7	-	-	-	6.4	7.6	-	9.8	9.4

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHB16

YEAR: 2005

Field(s) Acreage: 86.24 (Netted acres)

0.5 inch/week = 885,763 gallons/week = 3,708,129 gallons/month (based on 30 day month)  
 1 inch/week = 1,771,527 gallons/week = 7,592,258 gallons/month (based on 30 day month)  
 1.5 inch/week = 2,657,290 gallons/week = 11,388,388 gallons/month (based on 30 day month)  
 2 inch/week = 3,543,054 gallons/week = 15,164,517 gallons/month (based on 30 day month)  
 2.5 inch/week = 4,428,817 gallons/week = 18,880,646 gallons/month (based on 30 day month)

MONTH	Days	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
WW Eff. Application Rate (mg/l)	0												
Million Gallons/month	0												
Application rate (Inches/week)	2.6802	3,8384	1,8554	7,6928	2,9804	2,3375	0	5.8	9.9	8.9	5.7	4.2	55.8745
Application rate (Inches/month)	1.52	2.17	1.05	4.34	1.67	1.32	-	3.27	5.59	5.02	3.22	2.37	
WWTP Effluent N													
Ammonia N (mg/l)	12.015	32.7	34.55	63.95	27.75	22.35	30	30	30	30	30	30	30
Organic N (mg/l)	0	4.7	2.4	6.8	5.55	3.15	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Nitrate N (mg/l)	0	0.05	0.07	0.074	0.305	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	14.75	37.47	71.055	33.7	25.9	35	35	35	35	35	35	35
WW Reductions													
Ammonia after Volatiz.	0.95	11.4	31.1	32.6	60.8	28.4	21.2	28.5	28.5	28.5	28.5	28.5	28.5
TN after Denitrification	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5	28.5	28.5	28.5	28.5	28.5
TN (lbs)	270	975	464	3,700	678	411	-	1,377	2,351	2,114	1,354	997	14,692
Irrigation Water													
Flow (MG/month)		0	0	0	0	0	0	2.5	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	22	22	0	0	0	0
Irri. W. Reductions													
Ammonia after Volatiz.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0
TN after Denitrification	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.7	18.7	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	389	389	-	-	-	-
Additions and Uptake													
TN + WW + Irr. W. (lbs/acre)		4.1	14.9	7.1	58.7	10.4	6.3	6.0	27.1	36.0	32.4	20.7	15.3
TN for plow down (lbs/acre)	0	-	-	-	-	-	-	-	-	-	-	-	-
TN from fertilizers (lbs/acre)	100	4.1	14.9	7.1	68.7	15.4	10	12	13	-	-	-	-
TN for crop uptake (lbs/acre)	17	0	0	0	0	0	163	180	40.1	38.0	32.4	20.7	15.3
Barley Uptake (lbs/acre)	47	0	0	10	23	14	0	0	0	0	7	8	287.1
Wheat Uptake (lbs/acre)	153	0	0	0	20	10	25	40	27	26	15	0	0
Corn/Soybeans Uptake (lbs/acre)	4.1	14.9	-	23.7	-	-	-	13.1	10.0	10.4	12.7	13.3	
TN to percolate (lbs/acre)													
Percolate													
Precip (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.67	
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20	
Prec + Irr. PET Percolate (in/mo)	5.4	5.8	6.0	5.0	5.5	0.6	(1.3)	3.7	5.8	0.5	5.6	5.8	
Irrigation Water (in/mo)	-	-	-	-	-	-	-	1.4	1.4	-	-	-	
Total Water (in/mo)	5.4	5.8	6.0	5.0	5.5	0.8	0.1	5.1	5.8	5.5	5.8	5.8	
Percolate (M/acre)	1.23	1.31	1.37	1.14	1.24	0.19	0.02	1.16	1.30	1.48	1.28	1.32	
Percolate TN (ppm = mg/l)	3.4	11.4	-	20.8	-	-	11.3	7.7	7.0	10.0	10.0	6.8	

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHB:7

YEAR: 2005

198.28 (Wetted acres)

Field(s) Acreage

0.5 inch/week = 2,691,778 gallons/week = 11,536,163 gallons/month (based on 30 day month)  
 1 inch/week = 5,383,552 gallons/week = 23,072,388 gallons/month (based on 30 day month)  
 1.5 inch/week = 8,075,328 gallons/week = 34,608,549 gallons/month (based on 30 day month)  
 2 inch/week = 10,767,104 gallons/week = 46,144,732 gallons/month (based on 30 day month)  
 2.5 inch/week = 13,458,880 gallons/week = 57,690,915 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/l)	0	8,7486	13,0286	9,2464	7,332	10,3474	12,5454	12,5	12,6	14,5	8,5	15
Million Gallons/month												
Application rate (inches/month)		1.63	2.42	1.72	1.36	1.92	2.33	2.32	2.36	2.69	1.58	2.79
WWTP Effluent N												
Ammonia N (mg/l)	0	12,015	32.7	34.55	63.96	27.75	22.35	30	30	30	30	30
Organic N (mg/l)	0	2,885	4.7	2.4	6.8	5.65	3.15	2.5	2.5	2.5	2.5	2.5
Nitrate N (mg/l)	0	0.05	0.07	0.074	0.305	0.4	0.4	2.5	2.5	2.5	2.5	2.5
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	14.75	37.47	37.024	71,055	33.7	25.9	35	35	35	35	35
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	11.14	31.1	32.8	60.8	26.4	21.2	28.5	28.5	28.5	28.5	28.5
TN after Denitrification (mg/l)	0.85	12.0	30.5	30.0	57.7	27.5	21.1	28.5	28.5	28.5	28.5	28.5
TN (lbs)	878	3,310	2,314	3,527	2,370	2,204	2,969	3,040	3,443	2,019	3,562	2,969
Irrigation Water												
Flow (MG/month)	0	0	0	0	0	0	0	2.5	2.5	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	1	0	1	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	9	9	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	12	12	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	22	22	0	0	0
Irr W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.8	0.0	18.7	0.0	0.0	0.0	0.0	0.0
TN (lbs)							388	388	388	388	388	388
Additions and Uptake												
TN WW + Irr W. (lbs/acre)	4.4	16.7	11.7	17.8	12.0	11.1	16.9	17.3	17.4	10.2	18.0	15.0
TN for slow down (lbs/acre)	25	-	-	3	6	8	5	3	-	-	-	-
TN from fertilizers (lbs/acre)	0	-	-	-	12	-	-	-	-	-	-	-
TN for crop uptake (lbs/acre)	4.4	16.7	11.7	20.8	30.0	19.1	21.9	20.3	17.4	10.2	18.0	15.0
Bailey Uptake (lbs/acre)	8	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	25	0	0	0	10	17	33	50	29	11	0	0
Corn/Soybeans Uptake (lbs/acre)	150	0	0	0	0	0	0	0	0	7	10	8
TN to percolate (lbs/acre)	4.4	16.7	3.7	10.8	13.0	-	-	-	6.4	3.2	8.0	7.0
Percolate												
Precip (in/mo)	4.00	3.70	5.70	2.50	7.10	4.30	4.19	5.34	3.77	3.42	3.33	3.67
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.60	5.50	4.80	3.80	1.90	0.90	0.20
Irr. + PET Percolate (in/mo)	5.5	6.0	6.7	2.1	5.7	1.8	1.0	2.6	2.9	0	5.2	5.6
Irrigation Water (in/mo)	-	-	-	-	-	-	-	0.5	-	3.1	-	-
Total Water (in/mo)	5.5	6.0	6.7	2.1	5.7	1.8	1.5	3.3	2.9	3.1	5.2	5.8
Percolate (Mbar/acre)	1.25	1.36	1.52	0.47	1.30	0.41	0.33	0.74	0.65	0.70	1.18	1.31
Percolate TN (ppm = mg/l)	3.5	12.2	2.4	23.1	10.0	-	-	-	9.8	4.5	6.7	5.3

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**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3

YEAR: 2004

Field(s) Acreage 74.99 (Wetted acres)

0.5 inch/week =	1,018,139 gallons/week =	4,363,454 gallons/month (based on 30 day month)
1 inch/week =	2,036,278 gallons/week =	8,726,908 gallons/month (based on 30 day month)
1.5 inch/week =	3,054,418 gallons/week =	13,090,362 gallons/month (based on 30 day month)
2 inch/week =	4,072,557 gallons/week =	17,453,815 gallons/month (based on 30 day month)
2.5 inch/week =	5,090,696 gallons/week =	21,817,269 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mgd)	0	4,6313	3,3322	3,3889	0	3,486	8,3332	5,9863	5,582222	4,2252	7,628	7,2821
Million Gallons/month												2,9455
Application rate (Inches/month)												56.851022
WWTP Effluent N												
Ammonia N (mg/l)	0	29.045	26	36.75	44.35	11.985	9.87	16.1	10.375	35.02	2.88	4.375
Organic N (mg/l)	0	6.335	4.39	5.65	7.75	2.854	0.83	5.35	0.1625	2.77	4.085	4.69
Nitrate N (mg/l)	0	0.158	0.106	0.111	0.12	0.17	0.075	0.075	0.235	0.05	1.5695	5.55
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0.0935	0.0935
Total N (mg/l)	0	35.558	30.496	42.511	52.22	15.019	10.775	21.5575	12.3375	38.025	7.05	10.6345
WW Reductions												20.0435
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11.4	9.4	15.3	9.9	33.3	2.7	4.2
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12.3	8.7	17.6	10.0	30.8	5.9	8.9
TN (lbs)	1,120	690	977	-	356	607	876	468	1,099	373	538	7,508
Irrigation Water												
Flow (MG/month)	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Uptake												
TN WW + Irr W. (lbs/acre)	14.9	9.2	13.0	-	4.8	8.1	11.7	6.2	14.7	5.0	7.2	5.4
TN for plow down (lbs/acre)	25	-	-	-	6	6	5	8	-	-	-	-
TN from fertilizers (lbs/acre)	33	-	-	8	8	8	8	1	-	-	-	-
TN for crop uptake (lbs/acre)	14.9	9.2	13.0	8.0	18.8	22.1	24.7	15.2	14.7	5.0	7.2	5.4
Bailey Uptake (lb/acre)	25	0	0	0	0	0	0	0	0	7	8	2
Wheat Uptake (lb/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Corn/Sorghans Uptake (lb/acre)	200	0	0	0	10	35	50	70	25	10	0	0
TN to percolate (lb/acre)	14.9	9.2	5.0	-	-	-	-	-	4.7	-	-	3.4
Percolate												
Precip (in/mo)	4.80	3.10	2.60	6.40	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.90
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec. + Irr-PET Percolate (in/mo)	7.0	4.6	3.6	4.6	2.2	1.9	1.2	1.12	1.6	3.8	7.8	2.7
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-
Total Water (in/mo)	7.0	4.6	3.6	4.6	2.2	1.9	1.2	1.12	1.6	3.8	7.8	2.7
Percolate (Mlb/acre)	1.58	1.05	0.81	1.04	0.50	0.43	0.28	2.55	0.36	0.87	1.76	0.61
Percolate TN (ppm = mg/l)	9.5	8.8	6.2	-	-	-	-	-	12.9	-	-	5.5

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block 3A

YEAR: 2004

Field(s) Acreage 29.61 (Wetted acres)

MONTH	Days	Jan	31	Feb	28	Mar	31	Apr	30	May	31	Jun	30	Jul	31	Aug	31	Sep	30	Oct	31	Nov	30	Dec	31
WW Eff. Application Rate (mgd)	0	2,1135	1,0728	1,4538	0	2,4408	3,0689	1,4831	1,4831	1,219	1,9752	1,9752	3,3606	3,3606	1,8921	21,5629									
Million Gallons/month		0.5 inch/week = 402,015 gallons/week = 804,030 gallons/week = 1,205,045 gallons/week = 1,608,050 gallons/week = 2,010,075 gallons/week =	1.0 inch/week = 3,445,843 gallons/month (based on 30 day month)	1.5 inch/week = 5,168,764 gallons/month (based on 30 day month)	2.0 inch/week = 6,891,685 gallons/month (based on 30 day month)	2.5 inch/week = 8,614,607 gallons/month (based on 30 day month)																			
Application rate (inches/month)																									
WWTP Effluent N																									
Ammonia N (mg/l)	0	29.045	26	35.75	44.35	11.955	9.87	16.1	10.375	30.02	2.88	4.085	4.375	14.4											
Organic N (mg/l)	0	6.355	4.39	5.65	7.75	2.854	0.83	5.35	0.1625	2.77	4.085	4.69	5.55												
Nitrate N (mg/l)	0	0.158	0.106	0.111	0.12	0.17	0.075	0.075	0.075	1.8	0.235	0.085	1.5695	0.0835											
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
Total N (mg/l)	0	35.558	30.496	42.511	52.22	15.019	10.775	21.5275	12.3375	38.025	7.05	10.6395	20.0435												
WW Reductions																									
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11.4	9.4	15.3	9.9	28.5	2.7	4.2	13.7												
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12.3	8.7	17.6	10.0	26.8	5.9	8.9	16.4												
TN (lbs)	511	222	419	-	249	224	218	124	272	97	248	248	248	248	248	248	248	248	248	248	248	248	248	248	
Irrigation Water																									
Flow (MGD/ft)																									
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions																									
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Uptake																									
TN (WW + Irr W. (lbs/acre)	17.3	7.5	14.2	-	8.4	7.6	7.4	4.2	9.2	3.3	8.4	8.4													
TN for plow down (lbs/acre)	25	-	3	6	6	8	8	8	8	8	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TN from fertilizers (lbs/acre)	33	-	17.3	7.5	14.2	11.0	22.4	23.6	20.4	8.2	9.2	3.3	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
TN for crop uptake (lbs/acre)	25	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barley Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	200	0	0	0	0	10	35	50	70	25	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TN to percolate (lbs/acre)	17.3	7.5	6.2	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percolate																									
Precip (in/mo)	4.60	3.22	2.60	6.40	3.60	2.60	3.80	13.40	3.10	2.00	5.10	5.10													
PEI (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.0	1.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Prec. + Irr. PET Percolate (in/mo)	7.3	4.5	3.7	4.6	3.5	1.6	0.1	10.3	1.0	2.6	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	
Irrigation Water (in/mo)	7.3	4.5	3.7	4.6	3.5	1.6	0.1	10.3	1.0	2.6	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	
Total Water (in/mo)	1.66	1.01	0.84	1.04	0.80	0.37	0.03	2.34	0.23	0.58	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	
Percolate (lbs/acre)																									
Percolate TN (ppm = mg/l)	10.4	7.4	7.3	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

**FIELD: Center block #1B**  
**YEAR: 2004**  
**Fields/Acreage:** 70.46 (Wetted acres)

0.5inch/week =	956,635	Gallons/week =	4,099,866	gallons/month (based on 30 day month)
1inch/week =	1,913,211	Gallons/week =	8,199,732	gallons/month (based on 30 day month)
1.5inch/week =	2,865,906	Gallons/week =	12,299,598	gallons/month (based on 30 day month)
2inch/week =	3,826,542	Gallons/week =	16,399,464	gallons/month (based on 30 day month)
2.5inch/week =	4,783,177	Gallons/week =	20,499,330	gallons/month (based on 30 day month)

MONTH	Days	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
WW Eff. Application Rate (mgd)	0	6,4012	3,932	3,432	0	3,9793	6,952	5,8539	6,0071	4,2083	7,2009	7,2223	2,3376
Million Gallons/month													57,5266
Application rate (Inches/week)													
Application rate (Inches/month)		3.35	2.06	1.79	1	2.08	3.63	3.06	3.14	2.20	3.76	3.77	1.22
WWTP Effluent N		29,045	26	36,75	44,35	11,995	9,87	16,1	10,375	30,02	2,88	4,375	-
Ammonia N (mg/l)	0	6,355	4,39	5,65	7,75	2,854	0,83	5,35	0,1625	2,77	4,085	4,69	14,4
Organic N (mg/l)	0	0	0,105	0,111	0,12	0,17	0,075	0,075	1,8	0,235	0,085	1,5895	5,55
Nitrate N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0,0935	-
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	35,558	30,496	42,511	52,22	15,019	10,775	21,5275	12,3375	38,025	7,05	10,6345	20,0435
WW Reductions													
Ammonia after Volatilz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11,4	9,4	15,3	9,9	28.5	2,7	4,2	13.7
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12,3	8,7	17,6	10,0	26.8	5,9	8.9	16.4
TN (lbs)	1,548	814	990	-	407	507	960	503	940	353	533	320	7,774
Irrigation Water													
Flow (MG/month)		0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Irr. W. Reductions													
Ammonia after Volatilz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Uptake													
TN(WW + Irr W) (lbs/acre)	22.0	11.5	14.0	-	5.8	7.2	12.2	7.1	13.3	5.0	7.6	4.5	-
TN for plow down (lbs/acre)	25	-	3	6	8	8	5	3	-	-	-	-	-
TN from fertilizers (lbs/acre)	33	22.0	11.5	14.0	11.0	19.8	23.2	25.2	11.1	13.3	5.0	7.6	4.5
TN for crop uptake (lbs/acre)	25	0	0	8	0	0	0	0	0	0	7	8	2
Barley Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	200	11.5	6.0	10	35	50	70	25	10	0	0	0	0
TN to percolate (lbs/acre)	22.0	0	0	0	0	0	0	0	0	0	0	0	0
Percolate													
Precip (inches)	4.80	3.10	2.60	6.40	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.90	-
PET (inches)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20	-
Prec. + Irr - PET Percolate (inches)	8.0	5.1	3.7	4.6	2.6	1.4	1.4	11.6	1.7	3.9	8.0	3.9	-
Irrigation Water (inches)	8.0	5.1	3.7	4.6	2.6	1.4	1.4	11.6	1.7	3.9	8.0	3.9	-
Total Water (inches)	1.82	1.14	0.84	1.04	0.58	0.32	0.31	2.64	0.38	0.87	1.81	0.89	-
Percolate TN (ppm = mg/l)	12.1	10.1	7.2	1.0	-	-	-	-	-	8.7	-	2.9	-

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3C

YEAR: 2004

Field(s) Acreage 79.5 (Wetted acres)

0.5 inch/week = 1,079,372 gallons/week = 4,625,878 gallons/month (based on 30 day month)  
 1 inch/week = 2,158,743 gallons/week = 9,251,756 gallons/month (based on 30 day month)  
 1.5 inch/week = 3,238,115 gallons/week = 13,877,634 gallons/month (based on 30 day month)  
 2 inch/week = 4,317,486 gallons/week = 18,503,511 gallons/month (based on 30 day month)  
 2.5 inch/week = 5,396,858 gallons/week = 23,129,389 gallons/month (based on 30 day month)

MONTH	Days	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
WW Eff. Application Rate (mgd)	0	5.1505	4.4533	3.9347	0	4.4925	7.0201	6.4818	5.5131	4.7141	7.3554	7.0386	2.6543
Million Gallons/month		2.39	2.06	1.82	-	2.08	3.25	3.00	2.55	2.18	3.41	3.26	1.23
Application rate (inches/week)													
Application rate (Inches/month)													
WWTP Effluent N		29.045	26	36.75	44.35	11.995	9.87	16.1	10.375	30.02	2.88	4.375	14.4
Ammonia N (mg/l)	0	6.355	4.38	5.85	7.75	2.854	0.83	5.35	0.1625	2.77	4.085	4.69	5.55
Organic N (mg/l)	0	0.158	0.106	0.111	0.12	0.17	0.075	0.075	0.1625	0.235	0.085	1.5995	0.0335
Nitrate N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	35.558	30.496	42.511	52.22	15.019	10.775	21.5275	12.3375	38.025	7.05	10.6345	20.0435
WW Reductions													
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11.4	9.4	15.3	9.9	28.5	2.7	4.2	13.7
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12.3	8.7	17.6	10.0	26.8	5.9	8.9	16.4
TN (lbs)	1,245	922	1,135	-	459	512	952	462	1,053	360	520	364	7.983
Irrigation Water													
Flow (MG/month)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions													
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Uptake													
TN WW + Irr W. (lbs/acre)	15.7	11.6	14.3	-	5.8	6.4	12.0	5.8	13.3	4.5	6.5	4.6	
TN for plow down (lbs/acre)	25	-	3	6	8	8	5	3	-	-	-	-	
TN from fertilizers (lbs/acre)	33	15.7	11.6	14.3	11.0	19.8	22.4	25.0	9.8	13.3	4.5	6.5	158.4
TN for crop uptake (lbs/acre)	25	0	0	8	0	0	0	0	0	0	7	8	2
Barley Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	200	0	0	0	10	35	50	70	25	10	0	0	0
TN to percolate (lbs/acre)	15.7	11.6	6.3	10	-	-	-	-	-	3.3	-	-	2.6
Percolate													
Precip (in/mo)	4.80	3.10	2.60	6.40	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.90	
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20	
Prec. + Irr - PET Percolate (in/mo)	7.1	5.1	3.7	4.6	2.6	1.1	1.3	11.1	1.7	3.5	7.5	3.9	
Irrigation Water (in/mo)	7.1	5.1	3.7	4.6	2.6	1.1	1.3	11.1	1.7	3.5	7.5	3.9	
Total Water (in/mo)	1.60	1.16	0.84	1.04	0.58	0.24	0.29	2.50	0.38	0.79	1.69	0.89	
Percolate (Mlb/acre)	9.8	10.1	7.4	10	-	-	-	-	8.5	-	-	2.9	
Percolate TN (ppm = mg/l)													3.3

**FIELD: Center block #3D/EAST**

**YEAR:** 2004

**Field(s) Acreage** 40 (Wetted acres)

0.5 inch/week =	543,080 gallons/week =	2,327,486 gallons/month (based on 30 day month)
1 inch/week =	1,086,150 gallons/week =	4,654,971 gallons/month (based on 30 day month)
1.5 inch/week =	1,629,230 gallons/week =	6,982,157 gallons/month (based on 30 day month)
2 inch/week =	2,172,320 gallons/week =	9,309,943 gallons/month (based on 30 day month)
2.5 inch/week =	2,715,400 gallons/week =	11,637,428 gallons/month (based on 30 day month)

MONTH	Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WW Eff Application Rate (mgd)	0	1,6149	2,7444	1,2748	0	0	4,4328	3,7888	1,708	0	2,5899	2,5408	2,0707
Million Gallons/month													22,7651
Application rate (inches/month)		1.49	2.53	1.17	-	-	4.08	3.49	1.57	-	2.38	2.34	1.91
WWTP Effluent N		29,045	26	36,75	44,35	11,985	9,87	16,1	10,375	30,02	2,88	4,375	14,4
Ammonia N (mg/l)	0	6,355	4.39	5.65	7.75	2,854	0.83	5.35	0.1625	2.77	4,085	4,69	5.55
Organic N (mg/l)	0	0.158	0.106	0.111	0.12	0.17	0.075	0.075	1.8	0.235	0.085	1,5895	0.0335
Nitrate N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	35,558	30,496	42,511	52,22	15,019	10,775	21,5275	12,3375	38,025	7,05	10,6345	20,035
WW Reductions													
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11.4	9.4	15.3	9.9	28.5	2.7	4.2	13.7
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12.3	8.7	17.6	10.0	26.8	5.9	8.9	16.4
TN (lbs)	390	568	568	368	-	323	557	143	-	127	188	284	2,947
Irrigation Water													
Flow (MG/month)		0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions													
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Uptake													
TN WW Irr W. (lbs/acre)		9.8	14.2	9.2	-	-	8.1	13.9	3.6	-	3.2	4.7	7.1
TN for plow down (lbs/acre)	25	-	-	3	6	8	5	3	-	-	-	-	-
TN from fertilizers (lbs/acre)	33	-	-	8	8	8	8	1	-	-	-	-	-
TN for crop uptake (lbs/acre)	9.8	14.2	9.2	11.0	14.0	24.1	26.9	7.6	-	3.2	4.7	7.1	13.7
Barley Uptake (lb/acre)	25	0	0	8	0	0	0	0	0	0	7	8	2
Wheat Uptake (lb/acre)	0	0	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lb/acre)	200	0	0	0	10	35	50	70	25	10	0	0	0
TN to percolate (lb/acre)	9.8	14.2	1.2	1.0	-	-	-	-	-	-	-	-	5.1
Percolate													
Precip (in/mo)	4.80	3.10	2.60	6.40	3.60	2.60	3.80	13.40	3.10	2.00	5.10	2.90	
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20	
Prec. + Irr. PET Percolate (in/mo)	6.2	5.5	3.1	4.6	0.5	1.9	1.8	10.1	(0.5)	2.5	6.5	4.6	
Irrigation Water (in/mo)	6.2	5.5	3.1	4.6	0.5	1.9	1.8	10.1	(0.5)	2.5	6.5	4.6	
Total Water (in/mo)	6.2	5.5	3.1	4.6	0.5	1.9	1.8	10.1	(0.11)	0.65	1.48	1.04	
Percolate (Mlb/acre)	1.40	1.25	0.70	1.04	0.11	0.43	0.40	2.28	-	-	-	-	
Percolate TN (ppm = mg/l)	7.0	11.3	1.7	1.0	-	-	-	-	-	-	-	-	4.9

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #SD-WEST

YEAR: 2004

Field(s) Acreage 39.2 (Wetted acres)

0.5 inch/week =	532.218 gallons/week =	2,280,936 gallons/month (based on 30 day month)
1 inch/week =	1,064,437 gallons/week =	4,561,872 gallons/month (based on 30 day month)
1.5 inch/week =	1,596,655 gallons/week =	6,842,808 gallons/month (based on 30 day month)
2 inch/week =	2,128,874 gallons/week =	9,123,744 gallons/month (based on 30 day month)
2.5 inch/week =	2,661,092 gallons/week =	11,404,680 gallons/month (based on 30 day month)

MONTH	Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mgd)	0	0	0	0	3,933.88	2,812.9	0	0	2,756.1	2,677.32	5,104.3	0	2,220.6
Million Gallons/month													19,500.9
Application rate (inches/month)													2.09
WWTP Effluent N													
Ammonia N (mg/l)	0	29.045	26	36.75	44.35	11.995	9.87	16.1	10.375	30.02	2.68	4.375	14.4
Organic N (mg/l)	0	6.355	4.39	5.65	7.75	2.854	0.83	5.35	0.1625	2.77	4.085	4.69	5.55
Nitrate N (mg/l)	0	0.158	0.105	0.111	0.12	0.17	0.075	0.0775	1.8	0.235	0.085	1.5695	0.0355
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0.383375
Total N (mg/l)	0	35.558	30.495	42.511	52.22	15.019	10.775	21.5275	12.3375	39.025	7.05	10.6345	20.0453
WW Reductions													24,682333
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11.4	9.4	15.3	9.9	28.5	2.7	4.2	13.7
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12.3	8.7	17.6	10.0	26.8	5.9	6.9	16.4
TN (lbs)													304
Irrigation Water													
Flow (MG/month)		0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Irr. W. Reductions													
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)													-
Additions and Uptake													
TN WW + Irr. W. (lb/acre)		-	-	35.6	7.3	-	-	5.9	15.2	6.4	-	-	7.8
TN for plow down (lb/acre)	0	-	-	10	10	10	12	8	-	-	-	-	-
TN from fertilizer's (lb/acre)	50	-	-	45.6	17.3	10.0	12.0	13.9	15.2	6.4	7	8	12.82
TN for crop uptake (lb/acre)	-	0	0	0	0	0	0	0	0	0	0	0	0
Barley Uptake (lb/acre)	17	0	0	10	23	14	0	0	0	0	0	0	0
Wheat Uptake (lb/acre)	47	0	0	0	0	0	25	50	37	26	15	0	5.8
Corn/Soybeans Uptake (lb/acre)	153	0	0	0	0	0	0	0	0	0	0	0	0
TN to percolate (lb/acre)	-	-	-	22.6	3.3	-	-	-	-	-	-	-	-
Percolate													
Precip (in/mo)	4.80	3.10	2.60	6.40	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.90	
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20	
Prec. + Irr. PET Percolate (in/mo)	4.7	3.0	1.9	8.3	3.1	(2.2)	(1.7)	11.1	2.0	4.9	4.2	4.8	
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Water (in/mo)	4.7	3.0	1.9	8.3	3.1	(2.2)	(1.7)	11.1	2.0	4.9	4.2	4.8	
Percolate (M/acre)	1.06	0.68	0.43	1.88	0.71	(0.59)	(0.38)	2.51	0.46	1.11	0.95	1.08	
Percolate TN (ppm = mg/l)	-	-	-	12.0	4.7	-	-	-	-	-	-	-	5.3
													1.8

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHB11

YEAR: 2004

Field(s) Acreage 54.53 (Wetted acres)

0.5 inch/week = 740,354 gallons/week = 3,172,945 gallons/month (based on 30 day month)  
 1 inch/week = 1,480,708 gallons/week = 6,345,890 gallons/month (based on 30 day month)  
 1.5 inch/week = 2,221,051 gallons/week = 9,518,835 gallons/month (based on 30 day month)  
 2 inch/week = 2,961,415 gallons/week = 12,691,780 gallons/month (based on 30 day month)  
 2.5 inch/week = 3,701,769 gallons/week = 15,864,725 gallons/month (based on 30 day month)

MONTH	Days	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
WW Eff. Application Rate (mgd)	0	0.6613	0.7109	1.2085	3.8871	2.9795	0	0.3456	1.6725	4.0009	4.4519	1.4093	2.4271	23.7546
Million Gallons/month														
Application rate (inches/month)	0.45	0.48	0.82	2.63	2.01	-	0.23	1.13	2.70	3.01	0.95	-	1.64	
WWTP Effluent N														
Ammonia N (mg/l)	0	29.045	26	36.75	44.35	11.995	9.87	16.1	10.375	30.02	2.88	4.375	14.4	
Organic N (mg/l)	0	6.355	4.39	5.65	7.75	2.834	0.83	5.35	0.1625	2.77	4.085	4.69	5.55	
Nitrate N (mg/l)	0	0.158	0.106	0.111	0.12	0.17	0.075	0.0775	1.8	0.235	0.085	1.5695	0.0935	
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total N (mg/l)	0	35.558	30.486	42.511	52.22	15.019	10.775	21.5275	12.3375	38.025	7.05	10.345	20.435	
WW Reductions														
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11.4	9.4	15.3	9.9	28.5	2.7	4.2	13.7	
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12.3	8.7	17.6	10.0	26.8	5.9	8.9	16.4	
TN (lbs.)	160	147	348	1,378	305	-	51	140	894	216	104	332	4,077	
Irrigation Water														
Flow (MG/month)		0	0	0	0	0	0	0	1,9694	0	0	0	0	1,9694
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0.27	0	0	0	0	
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0.06	0	0	0	0	
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	17.4	0	0	0	0	
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0	
Total N (mg/l)	0	0	0	0	0	0	0	0	17.3	0	0	0	0	
Irr W. Reductions														
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.1	0.0	0.0	0.0	0.0	0.0	
TN (lbs.)	-	-	-	-	-	-	-	247	-	-	-	-	-	
Additions and Uptake														
TN NWW + Irr W. (lbs/acre)	2.9	2.7	6.4	25.3	5.6	-	5.5	2.6	16.4	4.0	1.9	6.1		
TN for plow down (lbs/acre)	0	-	-	-	-	-	-	-	-	-	-	-	-	
TN from fertilizers (lbs/acre)	51	2.9	2.7	6.4	35.3	17.6	10.0	17.5	9.6	16.4	4.0	1.9	6.1	130.3
TN for crop uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	7	8	2	
Barley Uptake (lbs/acre)	17	0	0	0	10	23	14	0	0	0	0	0	0	
Wheat Uptake (lbs/acre)	47	0	0	0	0	0	0	25	50	37	26	15	0	4.1
Corn/Sorghum Uptake (lbs/acre)	153	0	0	0	0	0	0	0	0	0	0	0	0	
TN to percolate (lbs/acre)	2.9	2.7	-	12.3	3.6	-	-	-	-	-	-	-	-	
Percolate														
Precip (in/mo)	4.80	3.10	2.60	6.40	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.90		
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20		
Prec.+ Irr. PET Percolate (in/mo)	5.1	3.5	2.7	7.2	2.5	(2.2)	(1.5)	9.6	2.2	3.1	5.2	4.3		
Irrigation Water (in/mo)	5.1	3.5	2.7	7.2	2.5	(2.2)	(0.1)	9.6	2.2	3.1	5.2	4.3		
Total Water (in/mo)	1.17	0.79	0.62	1.64	0.57	(0.50)	(0.03)	2.18	0.50	0.70	1.17	0.98		
Percolate (M/acre)														
Percolate TN (ppm = mg/l)	2.5	3.4	-	7.5	6.3	-	-	-	-	-	-	-	4.2	

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHB2

YEAR: 2004

Field(s) Acreage  
65.5 (Wetted acres)

0.5 inch/week =	889,294 gallons/week =	3,611,258 gallons/month (based on 30 day month)
1 inch/week =	1,778,587 gallons/week =	7,622,516 gallons/month (based on 30 day month)
1.5 inch/week =	2,667,881 gallons/week =	11,433,774 gallons/month (based on 30 day month)
2 inch/week =	3,557,174 gallons/week =	15,245,031 gallons/month (based on 30 day month)
2.5 inch/week =	4,446,468 gallons/week =	19,056,289 gallons/month (based on 30 day month)

MONTH Days	JAN 31	FEB 28	MAR 31	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	SEP 30	OCT 31	NOV 30	DEC 31
WW Eff. Application Rate (mgd) 0	0.731	1.7372	4.4764	2.8221	0	0.3936	2.7554	3.6662	4.1751	1.6792	2.272	24.9223
Million Gallons/month												
Application rate (Inches/month)	0.41	0.98	0.15	2.52	1.59	-	0.22	1.55	2.03	2.35	0.94	1.28
WWTP Effluent N												
Ammonia N (mg/l)	0	29,045	26	36,75	44,35	11,985	9,87	16,1	10,375	30,02	2.68	4,375
Organic N (mg/l)	0	6,355	4,39	5,65	7,75	2,854	0.83	5,35	0,1625	2,77	4,085	4,69
Nitrate N (mg/l)	0	0,158	0,105	0,111	0,12	0,17	0,075	0,075	1,8	0,235	0,085	1,5695
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0,0935
Total N (mg/l)	0	35,558	30,495	42,511	52,22	15,019	10,775	21,5275	12,3375	38,025	7,05	10,6345
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11,14	9.4	15,3	9.9	28.5	2.7	4.2
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12,3	8.7	17.6	10.0	26.8	5.9	8.9
TN (lbs)	177	360	79	1,587	286	-	58	231	805	204	124	311
Irrigation Water												
Flow (MG/month)	0	0	0	0	0	0	0	1,8883	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0.27	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0.06	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	17.4	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	17.73	0	0	0	0
Irr W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.1	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	237	-	-	-	-
Additions and Uptake												
TN (WW + Irr W. (lbs/acre))	2.7	5.5	1.2	24.2	4.4	-	4.5	3.5	12.3	3.1	1.9	4.8
TN for plow down (lbs/acre)	0	-	-	-	-	-	-	-	-	-	-	-
TN from fertilizers (lbs/acre)	51	-	-	10	12	10	12	7	-	-	-	-
TN for crop uptake (lbs/acre)	2.7	5.5	1.2	34.2	16.4	10.0	16.5	10.5	12.3	3.1	1.9	4.8
Barley Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	7	8	2
Wheat Uptake (lbs/acre)	17	0	0	10	23	14	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	17	0	0	0	0	0	25	50	37	26	15	0
TN to percolate (lbs/acre)	153	0	0	0	0	0	-	-	-	-	-	2.8
Percolate												
Precip (in/mo)	4.80	3.10	2.60	6.40	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.90
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec. + Irr. PET Percolate (in/mo)	5.1	4.0	2.1	7.1	2.1	(2.2)	(1.6)	10.0	1.1	2.4	5.1	4.0
Irrigation Water (in/mo)	5.1	4.0	2.1	7.1	2.1	(2.2)	(0.4)	10.0	1.1	2.4	5.1	4.0
Total Water (in/mo)	0.90	0.47	1.61	0.47	(0.50)	(0.50)	(0.09)	2.28	0.35	0.55	1.16	0.90
Percolate (M3/acre)												
Percolate TN (ppm = mg/l)	2.3	6.1	-	7.0	5.1	-	-	-	-	-	-	3.1

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHB3

YEAR: 2004

Field(s) Acreage  
74. (Wetted acres)

0.5 inch/week = 1,004.698 gallons/week = 4,305.849 gallons/month (based on 30 day month)  
1 inch/week = 2,009.396 gallons/week = 8,611.697 gallons/month (based on 30 day month)  
1.5 inch/week = 3,014.094 gallons/week = 12,917.546 gallons/month (based on 30 day month)  
2 inch/week = 4,018.792 gallons/week = 17,323.384 gallons/month (based on 30 day month)  
2.5 inch/week = 5,023.490 gallons/week = 21,529.243 gallons/month (based on 30 day month)

MONTH	Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WW Eff. Application Rate (mgd)	0	0.7697	1.655	1.0805	5.1922	2.4791	1.0946	0.335	4.4287	4.8415	6.5521	3.5571	3.5767
Million Gallons/month													35.5732
Application rate (inches/month)													
WWTP Effluent N		0.38	0.82	0.54	2.58	1.23	0.54	0.17	2.20	2.41	3.27	1.77	1.78
Ammonia N (mg/l)	0	29.045	26	35.75	44.35	11.985	9.87	16.1	10.375	30.02	2.88	4.375	14.4
Organic N (mg/l)	0	6.395	4.39	5.65	7.75	2.864	0.83	5.35	0.1625	2.77	4.085	4.69	5.55
Nitrate N (mg/l)	0	0.158	0.106	0.111	0.12	0.17	0.075	0.075	1.8	0.235	0.085	1.5695	0.0935
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	35.558	30.496	42.511	52.22	15.019	10.775	21.5275	12.3375	38.025	7.05	10.6345	20.0335
WW Reductions													
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.0	42.1	11.4	9.4	15.3	9.9	28.5	2.7	4.2	13.7
TN after Denitrification (mg/l)	0.85	29.0	24.8	33.8	42.5	12.3	8.7	17.6	10.0	26.8	5.9	8.9	16.4
TN (lbs)	186	343	304	1,840	253	80	49	371	1,082	321	263	490	5,583
Irrigation Water													
Flow (MG/month)		0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0.27	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0.06	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	17.4	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	17.73	0	0	0	0
Irr. W. Reductions													
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
TN (lbs)	-	-	-	-	-	-	-	-	264	-	-	-	-
TN (WW + Irr. W.) (lbs/acre)													
TN for plow down (lbs/acre)	0	2.5	4.6	4.1	24.9	3.4	1.1	4.2	5.0	14.6	4.3	3.5	6.6
TN from fertilizers (lbs/acre)	51	-	-	-	10	12	10	12	7	-	-	-	-
TN for crop uptake (lbs/acre)	2.5	4.6	4.1	34.9	15.4	11.1	16.2	12.0	14.6	4.3	3.5	6.6	130.0
Barley Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	47	0	0	10	23	14	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	153	0	0	0	0	0	25	50	37	26	15	0	4.6
TN to percolate (lbs/acre)	2.5	4.6	-	11.9	1.4	-	-	-	-	-	-	-	-
Percolate													
Precip (in/mo)	4.80	3.10	2.60	6.40	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.90	
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20	
Prec. + Irr. PET Percolate (in/mo)	5.1	3.8	2.4	7.2	1.7	(1.7)	(1.7)	(1.5)	10.7	1.9	3.4	6.0	4.5
Irrigation Water (in/mo)	5.1	3.8	2.4	7.2	1.7	(1.7)	(1.7)	(0.5)	10.7	1.9	3.4	6.0	4.5
Total Water (in/mo)	1.15	0.87	0.55	1.63	0.39	(0.37)	(0.11)	2.42	0.43	0.76	1.35	1.01	
Percolate (M3/acre)		2.2	5.3	-	7.3	3.6	-	-	-	-	-	-	4.6
Percolate TN (ppm = mg/l)													1.9

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

**FIELD: WHB44**      **YEAR:** 2004      **Field(s) Acreage:** 92.06 (Wetted acres)

0.5 inch/week = 1,249,899 gallons/week = 5,356,708 gallons/month (based on 30 day month)  
 1 inch/week = 2,499,797 gallons/week = 10,713,417 gallons/month (based on 30 day month)  
 1.5 inch/week = 3,749,696 gallons/week = 16,070,125 gallons/month (based on 30 day month)  
 2 inch/week = 4,999,594 gallons/week = 21,226,833 gallons/month (based on 30 day month)  
 2.5 inch/week = 6,249,493 gallons/week = 26,783,542 gallons/month (based on 30 day month)

MONTH Days	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<b>WW Eff. Application Rate (mgd)</b>	0	3,485.8	3,780.4	5,123	4,203.7	2,345.5	0.6731	4,556.2	3,574.1	7,643.5	0	6,886.1
Million Gallons/month												3,403.7
Application rate (inches/month)												45.6751
<b>WWTP Effluent N</b>												
Ammonia N (mg/l)	0	29,045	26	36,75	44,35	11,995	9,87	16,1	10,375	30,02	2,88	4,375
Organic N (mg/l)	0	6,355	4,33	5,65	7,75	2,854	0,83	5,35	0,625	2,77	4,085	4,69
Nitrate N (mg/l)	0	0,158	0,106	0,111	0,12	0,17	0,075	0,0775	1,8	0,235	0,085	1,5655
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0,0335
Total N (mg/l)	0	35,558	30,496	42,511	52,22	15,019	10,775	21,5275	12,3375	38,025	7,05	10,6345
<b>WW Reductions</b>												
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11.4	9.4	15.3	9.9	28.5	2.7	4.2
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12.3	8.7	17.6	10.0	26.8	5.9	8.9
TN (lbs)	843	782	1,477	1,490	240	49	49	669	299	1,708	-	508
<b>Irrigation Water</b>												
Flow (MG/month)	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	17.73	0	0	0	0
<b>Irr W. Reductions</b>												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.1	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	124	-	-	-	-
<b>Additions and UpTake</b>												
TN WW + Irr W (lbs/acre)	9.2	8.5	16.0	16.2	2.6	0.5	8.6	3.3	18.6	-	-	5.5
TN for plow down (lbs/acre)	25	-	3	6	6	8	5	3	-	-	-	5.1
TN from fertilizers (lbs/acre)	1	9.2	8.5	16.0	19.2	8.6	8.5	14.5	6.3	18.6	-	5.5
TN for crop uptake (lbs/acre)	25	0	0	8	0	0	0	0	0	7	8	2
Barley Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	0	0	0
Wheat/Uptake (lbs/acre)	0	0	0	0	10	17	33	50	29	11	0	0
Corn/Soybeans Uptake (lbs/acre)	150	9.2	8.5	8.0	9.2	-	-	-	7.6	-	-	3.1
TN to percolate (lbs/acre)	-	-	-	-	-	-	-	-	-	-	-	-
<b>Percolate</b>												
Precip (in/mo)	4.01	3.10	2.60	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.90	
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec. + Irr -PET Percolate (in/mo)	5.3	4.5	3.9	6.3	1.4	(1.9)	0.1	9.9	2.6	0.1	7.0	4.1
Irrigation Water (in/mo)	5.3	4.5	3.9	6.3	1.4	(1.9)	0.5	9.9	2.6	0.1	7.0	4.1
Percolate (Mlb/acre)	1.20	1.02	0.89	1.42	0.33	(0.44)	0.12	2.25	0.58	0.02	1.57	0.92
Percolate TN (ppm = mg/l)	7.6	8.3	9.0	6.5	-	-	-	-	13.0	-	-	3.3

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHBJS

YEAR: 2004

Field(s) Acreage	69.53 (Wetted acres)
0.5 inch/week =	944.009 gallons/week =
1 inch/week =	1,888.018 gallons/week =
1.5 inch/week =	2,832.026 gallons/week =
2 inch/week =	3,776.035 gallons/week =
2.5 inch/week =	4,720.044 gallons/week =

0.5 inch/month = 4,045,752 gallons/month (based on 30 day month)  
 1 inch/month = 8,091,504 gallons/month (based on 30 day month)  
 1.5 inch/month = 12,137,256 gallons/month (based on 30 day month)  
 2 inch/month = 16,183,008 gallons/month (based on 30 day month)  
 2.5 inch/month = 20,228,760 gallons/month (based on 30 day month)

MONTH	Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WW Eff. Application Rate (mgd)	0	4,9551	5,6661	4,0706	0	3,5561	5,1177	5,0147	2,5689	0	0	2,8957	5,403
Million Gallons/month													39,2479
Application rate (Inches/month)													
WWTP Effluent N													
Ammonia N (mg/l)	0	29,045	26	36,75	44,35	11,985	9,87	16,1	10,375	30,02	2,88	4,375	14,4
Organic N (mg/l)	0	6,355	4,39	5,65	7,75	2,854	0,83	5,35	0,1625	2,77	4,085	4,69	5,55
Nitrate N (mg/l)	0	0,158	0,106	0,111	0,12	0,17	0,075	0,0775	1,8	0,235	0,085	1,5695	0,0935
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	35,558	30,495	42,511	52,22	15,019	10,775	21,5275	12,3375	38,025	7,05	10,6345	20,0435
WW Reductions													
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11.4	9.4	15.3	9.9	28.5	2.7	4.2	13.7
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12.3	8.7	17.6	10.0	26.8	5.9	8.9	16.4
TN (lbs)	1,198	1,173	1,174	-	-	363	373	737	215	-	-	214	740
Irrigation Water													
Flow (MG/month)		0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Irr. W. Reductions													
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	176	-	-	-	-	-	-
Additions and Uptake													
TN (WW + Irr W (lbs/acre)	17.2	16.9	-	-	5.2	7.9	10.6	31	-	-	-	3.1	10.6
TN for plow down (lbs/acre)	25	-	3	6	8	5	3	-	-	-	-	-	-
TN from fertilizers (lbs/acre)	65	-	16	16	16	16	16	16	1	-	-	-	-
TN for crop uptake (lbs/acre)	17.2	16.9	16.9	19.0	27.2	31.9	31.6	7.1	-	-	-	3.1	10.6
Barley Uptake (lbs/acre)	8	0	8	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	290	0	0	0	10	35	50	70	25	10	0	0	0
TN to percolate (lbs/acre)	17.2	16.9	8.9	9.0	-	-	-	-	-	-	-	-	2.6
Percolate													
Precip (in/mo)	4.80	3.10	2.60	6.40	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.90	
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.80	0.20	
Prec. + Irr + PET Percolate (in/mo)	7.3	6.0	4.1	4.6	2.4	0.5	1.0	9.9	(0.5)	0.1	5.7	5.6	
Irrigation Water (in/mo)	7.3	6.0	4.1	4.6	2.4	1.3	1.0	9.9	(0.5)	0.1	5.7	5.6	
Total Water (in/mo)	1.66	1.36	0.92	1.04	0.54	0.29	0.22	2.23	(0.11)	0.02	1.30	1.26	
Percolate (lbs/acre)		10.4	12.4	9.7	8.6	-	-	-	-	-	-	-	2.1
Percolate TN (ppm = mg/l)													3.6

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHB16      YEAR: 2004  
 Field(s) Acreage: 65.24 (Wetted acres)

0.5 inch/week = 885.763 gallons/week = 3,796,129 gallons/month (based on 30 day month)  
 1 inch/week = 1,771,527 gallons/week = 7,592,258 gallons/month (based on 30 day month)  
 1.5 inch/week = 2,657,290 gallons/week = 11,388,388 gallons/month (based on 30 day month)  
 2 inch/week = 3,543,034 gallons/week = 15,184,517 gallons/month (based on 30 day month)  
 2.5 inch/week = 4,428,817 gallons/week = 18,980,646 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mgd)	0	0.8843	1,5304	2,4507	0	3,0376	3,8858	4,3051	1,847	0	0	2,0318
Application rate (Million Gallons/month)												2,0604
Application rate (Inches/month)	0.49	0.86	1.39	-	1.71	2.19	2.43	1.04	-	-	1.15	1.16
WWTP Effluent N												
Ammonia N (mg/l)	0	29.045	26	36.75	44.35	11.995	9.87	16.1	10.375	30.02	2.88	4.375
Organic N (mg/l)	0	6.355	4.39	5.65	7.75	2.854	0.83	5.35	0.1625	2.77	4.085	4.69
Nitrate N (mg/l)	0	0.158	0.106	0.111	0.12	0.17	0.075	0.0775	1.8	0.235	0.085	1.5595
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0.0355
Total N (mg/l)	0	35.558	30.496	42.5111	52.22	15.019	10.775	21.5275	12.3375	38.025	7.05	10.6345
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11.4	9.4	15.3	9.9	28.5	2.7	4.2
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	42.5	12.3	8.7	17.6	10.0	26.8	5.9	8.9
TN (lbs)	203	317	710	-	310	283	632	155	-	-	150	282
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	1.3391	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0.055	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0.26	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	16.4	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	159	-	-	-	-	-
Additions and Uptake												
TN WW + Irr W. (lbs/acre)												
TN for plow down (lbs/acre)	25	-	-	4.9	10.9	-	4.8	6.8	9.7	2.4	-	2.3
TN from fertilizers (lbs/acre)	65	-	-	-	3	6	8	5	3	-	-	4.3
TN for crop uptake (lbs/acre)	3.2	4.9	10.9	19.2	27.0	16	16	17	-	-	-	139.8
Barley Uptake (lbs/acre)	0	0	8	0	0	0	0	0	5.4	-	-	2.3
Wheat Uptake (lbs/acre)	8	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	0	7	10
TN to percolate (lbs/acre)	200	0	4.9	9.2	-	35	50	70	25	10	0	0
Percolate												
Precip (in/mo)	4.80	3.10	2.60	6.40	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.99
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec. + PET Percolate (in/mo)	5.2	3.9	3.3	4.6	2.2	(0.0)	0.7	9.5	(0.5)	0.1	5.3	3.9
Irrigation Water (in/mo)	5.2	3.9	3.3	4.6	2.2	0.8	0.7	9.5	(0.5)	0.1	5.3	3.9
Percolate (Mbaце)	1.17	0.87	0.74	1.04	0.50	0.17	0.17	2.16	(0.11)	0.02	1.21	0.87
Percolate TN (ppm = mg/l)	2.7	5.5	3.9	8.8	-	-	-	-	-	-	-	-

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHBJ7

YEAR: 2005

198.26 (Wetted acres)

0.5 inch/week = 2,691,776 gallons/week = 11,536,183 gallons/month (based on 30 day month)  
 1 inch/week = 5,383,552 gallons/week = 23,072,366 gallons/month (based on 30 day month)  
 1.5 inch/week = 8,075,328 gallons/week = 34,608,549 gallons/month (based on 30 day month)  
 2 inch/week = 10,767,104 gallons/week = 46,144,732 gallons/month (based on 30 day month)  
 2.5 inch/week = 13,458,880 gallons/week = 57,680,915 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/d)	0	7,3929	8,5183	14,5353	13,2241	14,3553	2,2925	11,5549	11,6775	14,15662	0	13,7622
Million Gallons/month												11,8137
Application rate (inches/month)												123,28332
WWTP Effluent N		1.37	1.58	2.70	2.46	2.67	0.43	2.15	2.17	2.63	-	2.56
Ammonia N (mg/l)	0	29,046	26	36,75	44,35	11,995	9,87	16,1	10,375	30,02	2,88	4,375
Organic N (mg/l)	0	6,356	4,39	5,65	7,75	2,854	0,83	5,35	1,8	2,77	4,085	4,69
Nitrate N (mg/l)	0	0,158	0,106	0,111	2,5	0,17	0,075	0,0775	0,1625	0,235	0,085	1,5695
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0,0953
Total N (mg/l)	0	35,558	30,496	42,511	52,22	15,019	10,775	21,5275	12,3375	38,025	0	20,0435
WW Reductions												24,6830833
Ammonia after Volatiz. (mg/l)	0.95	27.6	24.7	34.9	42.1	11.4	9.4	15.3	9.9	28.5	2.7	4.2
TN after Denitrification (mg/l)	0.85	29.0	24.8	34.6	44.5	12.3	8.7	17.6	10.0	26.8	5.9	8.9
TN (lbs)	1,787	1,763	4,191	4,911	1,467	167	1,697	978	3,164	-	1,016	1,618
Irrigation Water Flow (MG/month)		0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions												22,761
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Upake												
TN WW + Irr W. (lbs/acre)	90	8.9	21.1	24.6	7.4	0.8	8.6	4.9	16.0	-	5.1	8.2
TN for blow down (lbs/acre)	25	-	-	3	6	8	5	3	-	-	-	-
TN from fertilizers (lbs/acre)	1	-	-	-	-	-	1	-	-	-	-	-
TN for crop uptake (lbs/acre)	9.0	8.9	21.1	27.8	13.4	8.8	14.4	7.9	16.0	-	5.1	8.2
Barley Uptake (lbs/acre)	25	0	0	8	0	0	0	0	0	7	8	2
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	153	0	0	0	10	17	33	50	29	11	0	0
TN to percolate (lbs/acre)	9.0	8.9	13.1	17.8	-	-	-	-	50	-	-	6.2
Percolate												
Precip (in/mo)	4.80	3.10	2.60	6.40	3.80	2.60	3.80	13.40	3.10	2.00	5.10	2.90
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.00	1.90	0.90	0.20
Prec + Irr-PET Percolate (in/mo)	6.1	4.6	4.6	7.1	3.2	(1.8)	0.4	10.7	2.1	0.1	6.8	4.9
Irrigation Water (in/mo)	6.1	4.6	4.6	7.1	3.2	(1.8)	0.4	10.7	2.1	0.1	6.8	4.9
Total Water (in/mo)	6.1	4.6	4.6	7.1	3.2	(1.8)	0.4	10.7	2.1	0.1	6.8	4.9
Percolate (M/acre)	1.38	1.04	1.04	1.60	0.72	(0.40)	0.10	2.42	0.48	0.02	1.53	1.11
Percolate TN (ppm = mg/l)	6.6	8.6	12.6	11.1	-	-	-	10.3	-	-	5.6	4.6

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3

YEAR: 2003

Fields) Acreage

74.99 (Wetted acres)

0.5 inch/week = 1.018139 gallons/week = 4,363,454 gallons/month (based on 30 day month)  
 1 inch/week = 2,036,278 gallons/week = 8,726,908 gallons/month (based on 30 day month)  
 1.5 inch/week = 3,054,418 gallons/week = 13,090,362 gallons/month (based on 30 day month)  
 2 inch/week = 4,072,557 gallons/week = 17,453,815 gallons/month (based on 30 day month)  
 2.5 inch/week = 5,090,596 gallons/week = 21,817,269 gallons/month (based on 30 day month)

MONTH	Jan	31	Feb	28	Mar	31	Apr	30	May	31	Jun	30	Jul	31	Aug	31	Sep	30	Oct	31	Nov	30	Dec	31
WW Eff. Application Rate (mgd)	0																							
Million Gallons/month	2.88335		3.456		2.8333		6.5032		3.6505		4.8798		0		6.732		2.6827		6.7621		3.8953		6.0637	
Application rate (inches/month)	1.41		1.70		1.39		3.19		1.79		2.40		-		3.31		1.31		3.32		1.91		-	
WWTP Effluent N																								
Ammonia N (mg/l)	0	18.19	21.47	1.41	15.178	14.9975	14.65	9.11	10.97	41.1	23.95	36.65	30.95											
Organic N (mg/l)	0	4.44	2.56	3.22	5.546	3.4175	2.73	6.58	6.07	8.95	7.25	4												
Nitrate N (mg/l)	0	0.05	0.07	0.076	0.078	0.05	0.185	0.4	0.55	0.167	0.075	0.115	0.11											
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0											
Total N (mg/l)	0	22.68	24.1	4.706	20.802	18.465	17.565	15.09	17.06	47.337	32.975	44.015	35.06											
WW Reductions																								
Ammonia other Volatiz. (mg/l)	0.95	17.3	20.4	1.3	14.4	14.2	13.9	8.7	10.4	39.0	22.8	34.8	29.4											
TN after Denitrification (mg/l)	0.85	18.5	19.6	3.9	17.0	15.1	14.3	12.4	14.0	38.5	27.0	35.9	28.5											
TN (lbs)	442	584	93	924	458	582	-	786	855	-	1,523	1,185	1,442											
Irrigation Water																								
Flow (MG/month)		0	0	0	0	0	0	0	0	0	0	0	0											
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0											
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0											
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0											
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0											
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0											
Ir. W. Reductions																								
Ammonia other Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0											
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0											
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-	-											
Additions and Uptake																								
TN WW + Ir. W. (lbs/acre)		5.9	7.5	1.2	12.3	6.1	7.8	-	6	6	6	6	10.5	11.4	20.3	15.5	19.2							
TN for plow down (lbs/acre)		10.9	12.5	5	5	8	6	6	6	6	6	6	18.5	11.4	20.3	15.5	19.2							
TN from fertilizer (lbs/acre)	23	5	5	6	20.3	12.1	-	-	-	-	-	-	0	0	7	8	2							
TN for crop uptake (lbs/acre)		10.9	0	6.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Bailey Uptake (lbs/acre)	17	0	0	0	10	20	20	4	0	0	0	0	-	-	26	14	0							
Wheat Uptake (lbs/acre)	54	0	0	0	0	0	0	0	0	0	0	0	-	-	75	75	17.2							
Corn/Soybeans Uptake (lbs/acre)	137	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-						
TN to percolate (lbs/acre)	10.9	12.5	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Percolate																								
Precip (in/mo)	2.20	9.70	6.30	5.50	6.10	4.90	8.00	7.00	8.00	5.00	5.30	6.50												
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20												
Prec. + Ir.-PET Percolate (in/mo)	3.5	11.13	7.0	6.9	4.6	2.5	5.4	5.7	6.4	6.3	6.3	8.3												
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-												
Total Water (in/mo)	3.5	11.13	7.0	6.9	4.6	2.5	5.4	5.7	6.4	6.3	6.3	8.3												
Percolate (M/acre)	0.79	2.56	1.58	1.56	1.04	0.57	1.22	1.29	1.45	1.43	1.43	1.88												
Percolate TN (ppm = mg/l)	13.7	4.9	-	0.2	-	-	-	-	-	-	-	-	5.0	5.3	9.2									

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3A

YEAR: 2003

Field(s), Acreage 29.61 (Wetted acres)

0.5 inch/week =	402,015 gallons/week =	1,722,921 gallons/month (based on 30 day month)
1 inch/week =	804,030 gallons/week =	3,445,843 gallons/month (based on 30 day month)
1.5 inch/week =	1,208,045 gallons/week =	5,168,784 gallons/month (based on 30 day month)
2 inch/week =	1,608,060 gallons/week =	6,881,685 gallons/month (based on 30 day month)
2.5 inch/week =	2,010,075 gallons/week =	8,614,607 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/l)	0	0	0.304	1.0046	1.8809	1.5374	1.1118	0	1.4535	3.3054	2.7986	1.7527
Million Gallons/month												1.8988
Application rate (Inches/month)												
WWTP Effluent N												
Ammonia N (mg/l)	0	18.19	21.47	1.41	15.178	14.9975	14.85	9.11	10.97	41.1	23.95	38.65
Organic N (mg/l)	0	4.44	2.56	3.22	5.546	3.4175	2.73	5.58	5.54	6.07	8.95	7.25
Nitrate N (mg/l)	0	0.05	0.07	0.076	0.078	0.05	0.185	0.4	0.55	0.187	0.075	0.115
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0.11
Total N (mg/l)	0	22.88	25	4.708	20.802	18.485	17.585	15.09	17.08	47.337	32.975	44.015
WW Reductions												35.06
Ammonia after Volatiz. (mg/l)	0.95	17.3	20.4	1.3	14.4	14.2	13.9	8.7	10.4	39.0	22.8	34.8
TN after Denitrification (mg/l)	0.85	18.5	19.6	3.9	17.0	15.1	14.3	12.4	14.0	38.5	27.0	35.9
TN (lbs)			50	33	239	182	133		170	1,061	631	524
Irrigation Water												451
Flow (MG/month)					0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
IRR W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)												0
Additions and Update												
TNWW + Irr.W. (lbs/acre)												
TN from fertilizers (lbs/acre)	23	5	5	5	6	6	5	5	3			
TN for crop uptake (lbs/acre)	50	6.7	6.1	19.1	12.5	12.5	5.0	8.7	35.8			
Barley Uptake (lb/acre)	18	0	0	0	0	0	0	0	0	7	17.7	15.2
Wheat Uptake (lb/acre)	54	0	0	10	20	20	4	0	0	0	0	2
Com/Soybeans Uptake (lb/acre)	137	0	0	0	0	0	25	45	27	28	14	0
TN to percolate (lb/acre)	5.0	8.7	-	-	-	-	-	-	9.8	0.3	8.7	13.2
Percolate												
Precip (in/mo)	2.20	9.70	6.30	5.50	8.10	4.80	8.00	7.00	8.00	5.00	5.30	8.50
PEt (in/mo)	0.10	0.10	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.90	0.20
Prec. + Irr.-PET Percolate (in/mo)	2.1	10.0	6.8	5.8	4.7	1.5	2.5	3.9	8.5	6.6	6.6	10.7
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-
Total Water (in/mo)	2.1	10.0	6.8	5.8	4.7	1.5	2.5	3.9	8.5	6.6	6.6	10.7
Percolate (Mlb/acre)	0.48	2.26	1.55	1.31	1.08	0.34	0.57	0.88	1.93	1.49	1.49	2.41
Percolate TN (ppm = mg/l)	10.5	3.0	-	-	-	-	-	-	5.1	0.2	0.5	5.5

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3B

YEAR: 2003

Field(s) Acreage

0.5 inch/week =	958,635 gallons/week =	4,089,866 gallons/month (based on 30 day month)
1 inch/week =	1,913,271 gallons/week =	8,169,732 gallons/month (based on 30 day month)
1.5 inch/week =	2,868,806 gallons/week =	12,299,588 gallons/month (based on 30 day month)
2 inch/week =	3,828,542 gallons/week =	16,388,464 gallons/month (based on 30 day month)
2.5 inch/week =	4,783,177 gallons/week =	20,499,330 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/d)	0	5,2462	1,0824	4,0293	0	2,2018	4,7073	7,2297	2,0598	0,8888	3,8835	5,4427
WW Eff. Million Gallons/month	0											
Application rate (Inches/week)												
WWTP Effluent N												
Ammonia N (mg/l)	0	18.19	21.47	1.41	15.176	14.85	9.11	10.97	41.1	23.95	38.65	0
Organic N (mg/l)	0	4.44	2.58	3.22	5.548	3.4175	2.73	5.58	6.07	8.85	7.25	3.24
Nitrate N (mg/l)	0	0.05	0.07	0.076	0.078	0.06	0.4	0.55	0.167	0.075	0.115	0.11
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	22.68	24.1	4.706	20.802	18.485	17.585	15.08	47.337	32.975	44.015	35.08
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	17.3	20.4	1.3	14.4	14.2	13.9	8.7	10.4	39.0	22.8	34.8
TN after Denitrification (mg/l)	0.85	18.5	19.8	3.9	17.0	15.1	14.3	12.4	14.0	38.5	27.0	35.9
TN (lbs)	810	177	132	-	277	562	750	241	278	875	1,828	1,473
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr. W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Uptake												
TN + N + Int N (lbs/acre)												
TN for plow down (lbs/acre)	25	-	-	3	3	8	5	5	3	-	-	-
TN from fertilizers (lbs/acre)	13	115	2.5	1.9	9.6	15.9	16.2	15.8	6.4	3.9	12.4	20.9
TN for crop uptake (lbs/acre)	25	0	0	8	0	0	0	0	0	7	8	2
Barley Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	149	0	0	10	25	33	50	20	11	0	0	0
TN to percolate (lbs/acre)	11.5	2.5	-	-	-	-	-	-	-	5.4	15.1	16.9
Percolate												
Precip (in/mo)	2.20	9.70	6.30	5.50	8.10	4.80	8.00	7.00	8.00	5.00	5.30	8.50
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.80	0.20
Prec. + Irr. PET Percolate (in/mo)	4.8	10.2	7.7	3.7	4.0	2.6	6.3	3.2	4.9	5.1	7.2	11.5
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-
Total Water (in/mo)	4.8	10.2	7.7	3.7	4.0	2.6	6.3	3.2	4.9	5.1	7.2	11.5
Percolate (Mlb/acre)	1.10	2.30	1.74	0.84	0.89	0.58	1.42	0.72	1.10	1.16	1.84	2.81
Percolate TN (ppm = mg/l)	10.5	1.1	-	-	-	-	-	-	-	4.7	9.2	7.2

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3C

YEAR: 2003

Field(s) Acreage  
79.5 (Wetted acres)

0.5 inch/week =	1,078,372 gallons/week =	4,625,878 gallons/month (based on 30 day month)
1 inch/week =	2,158,743 gallons/week =	9,251,756 gallons/month (based on 30 day month)
1.5 inch/week =	3,238,115 gallons/week =	13,877,634 gallons/month (based on 30 day month)
2 inch/week =	4,317,486 gallons/week =	18,503,511 gallons/month (based on 30 day month)
2.5 inch/week =	5,396,858 gallons/week =	23,129,389 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mgd)	0											
WW Eff. Million Gallons/month	0											
Application rate (Inches/week)	4.4334	5.0562	3.9809	0	2.7675	5.0114	9.7555	5.7785	2.3343	3.8679	6.7848	6.5285
WWTP Effluent N												
Ammonia N (mg/l)	0	18.19	21.47	1.41	15.178	14.9875	9.11	10.97	41.1	23.85	38.65	30.85
Organic N (mg/l)	0	4.44	2.58	3.22	5.548	3.4175	2.73	5.58	5.54	8.07	7.25	4
Nitrate N (mg/l)	0	0.05	0.07	0.076	0.078	0.05	0.185	0.4	0.55	0.187	0.075	0.115
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0.11
Total N (mg/l)	0	22.68	24.1	4.708	20.802	18.485	17.595	15.09	17.06	47.337	32.975	44.015
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	17.3	20.4	1.3	14.4	14.2	13.9	8.7	10.4	39.0	22.8	34.8
TN after Denitrification (mg/l)	0.85	18.5	19.8	3.9	17.0	15.1	14.3	12.4	14.0	38.5	27.0	35.9
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr. W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Additions and Uptake												
TN (lbs)												
TN (W/W + Irr W. (lbs/acre)												
TN from fertilizers (lbs/acre)	13	8.6	10.4	1.6	3	4.4	7.5	12.7	6.5	9.4	10.4	25.6
TN for plow down (lbs/acre)												
TN for crop uptake (lbs/acre)	13	8.6	10.4	1.6	7	6	8	5	3			
Barley Uptake (lbs/acre)	17	0	0	0	100	16.4	15.5	17.7	11.5	9.4	10.4	20.7
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	7	2
Com/Soybeans Uptake (lbs/acre)	156	0	0	0	10	25	50	50	14	7	0	0
TN to percolate (lbs/acre)												
Percolate												
Precip (in/mo)	2.20	8.70	0.30	5.50	6.10	4.90	8.00	7.00	8.00	5.00	5.30	8.50
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.80	1.90	0.90	0.20
Prec + Irr-PET Percolate (in/mo)	4.2	11.9	7.4	3.7	4.1	2.4	7.0	4.8	5.5	4.8	7.5	11.5
Irrigation Water (in/mo)												
Total Water (in/mo)	4.2	11.9	7.4	3.7	4.1	2.4	7.0	4.8	5.5	4.8	7.5	11.5
Percolate (Mlb/acre)	0.94	2.70	1.68	0.84	0.92	0.55	1.59	1.08	1.24	1.09	1.71	2.81
Percolate TN (ppm = mg/l)	9.1	3.8	-	-	-	-	-	-	-	2.0	3.1	10.3
												7.2

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #2D-EAST

YEAR: 2003

40 (Wetted acres)

**Field(s) Acreage**

0.5 inch/week =	543,080 gallons/week =	2,327,486 gallons/month (based on 30 day month)
1 inch/week =	1,086,160 gallons/week =	4,654,971 gallons/month (based on 30 day month)
1.5 inch/week =	1,628,240 gallons/week =	6,982,457 gallons/month (based on 30 day month)
2 inch/week =	2,172,320 gallons/week =	9,309,943 gallons/month (based on 30 day month)
2.5 inch/week =	2,715,400 gallons/week =	11,637,429 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mgd)	0											
Million Gallons/month												
Application rate (Inches/week)												
Application N (Inches/month)												
WWTP Effluent N												
Ammonia N (mg/l)	0	18.19	21.47	1.41	15.178	14.8975	14.65	9.11	10.97	41.1	23.95	38.85
Organic N (mg/l)	0	4.44	2.58	3.22	5.548	3.4176	2.73	5.58	5.54	6.07	8.95	30.95
Nitrate N (mg/l)	0	0.05	0.07	0.078	0.078	0.078	0.185	0.4	0.55	0.167	0.075	7.25
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0.115	0.11
Total N (mg/l)	0	22.68	24.1	4.708	25	18.485	17.595	15.08	17.08	47.337	32.975	44.015
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	17.3	20.4	1.3	14.4	14.2	13.9	8.7	10.4	38.0	22.6	34.8
TN after Denitrification (mg/l)	0.85	18.5	19.6	3.9	17.0	15.1	14.3	12.4	14.0	38.5	27.0	35.9
TN (lbs)	303	368	92	-	-	-	89	376	387	562	1,244	621
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Uptake												
TN (WW + Irr W. (lbs/acre)	7.6	9.1	2.3	-	-	-	2.5	9.4	7.2	14.8	31.1	15.5
TN for plow down (lbs/acre)	25	-	3	6	6	5	3	-	-	-	-	-
TN from fertilizers (lbs/acre)	13	-	7	6	-	-	-	-	-	-	-	-
TN for crop uptake (lbs/acre)	7.6	9.1	2.3	100	120	80	75	12.4	7.2	14.8	31.1	15.5
Barley Uptake (lbs/acre)	25	0	8	0	0	0	0	0	0	7	8	2
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Com/Soybeans Uptake (lbs/acre)	151	0	0	10	15	50	50	20	6	0	0	0
TN to percolate (lbs/acre)	7.6	9.1	-	-	-	-	-	-	1.2	7.8	23.1	13.5
Percolate												
Precip (in/mo)	2.20	9.70	6.30	5.50	6.10	4.90	8.00	7.00	8.00	5.00	5.30	8.50
PET (in/mo)	0.10	0.10	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20	0.20
Prec + Irr -PET Percolate (in/mo)	3.9	11.7	8.2	3.7	2.8	0.1	3.4	5.1	5.2	5.5	8.2	10.7
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-
Total Water (in/mo)	3.9	11.7	8.2	3.7	2.8	0.1	3.4	5.1	5.2	5.5	8.2	10.7
Percolate (Mlb/acre)	0.88	2.64	1.85	0.84	0.63	0.02	0.77	1.15	1.18	1.25	1.88	2.42
Percolate TN (ppm = mg/l)	8.6	3.5	-	-	-	-	-	-	1.0	8.2	12.4	5.6

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: Center block #3D-WEST

YEAR: 2003

Field(s) Acreage

39.2 (Wetted acres)
---------------------

0.5 inch/week = 532,218 gallons/week = 2,280,936 gallons/month (based on 30 day month)
1 inch/week = 1,064,437 gallons/week = 4,561,872 gallons/month (based on 30 day month)
1.5 inch/week = 1,598,655 gallons/week = 6,842,808 gallons/month (based on 30 day month)
2 inch/week = 2,128,874 gallons/week = 9,123,744 gallons/month (based on 30 day month)
2.5 inch/week = 2,661,092 gallons/week = 11,404,880 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/l)	0	0	0	0	2,568	4,8807	4,6312	0	0	0	0	0
Million Gallons/month												
Application rate (Inches/week)					2.44	4.59	4.63					
Application rate (Inches/month)												
WWTP Effluent N												
Ammonia N (mg/l)	0	0	0	0	15,178	14,9875	14,65	9,11	10,97	0	0	0
Organic N (mg/l)	0	0	0	0	5,548	3,4175	2,73	5,58	5,54	0	0	0
Nitrates N (mg/l)	0	0	0	0	0,078	0,065	0,0185	0,4	0,55	0	0	0
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	20,802	18,485	17,985	15,09	17,08	0	0	0
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.85	0.0	0.0	0.0	14.4	14.2	13.9	8.7	10.4	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.85	0.0	0.0	0.0	17.0	15.1	14.3	12.4	14.0	0.0	0.0	0.0
TN (lbs)						326	582	512	-	-	-	-
Irrigation Water												
Flow (MG/month)	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr. W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)												
Additions and Uptake												
TN (WW + Irr. W. (lbs/acre)												
TN from fertilizers (lbs/acre)	25	-	-	-	3	8.3	14.9	13.1	-	-	-	-
TN for plow down (lbs/acre)	43	-	-	-	8	8	5	3	-	-	-	-
TN for crop uptake (lbs/acre)	-	-	-	-	7	9.0	14.3	22.9	18.1	30	10	10
Barley Uptake (lbs/acre)	8	0	0	0	0	0	0	0	0	0	100	100
Wheat Uptake (lbs/acre)	17	0	0	0	0	0	0	0	0	0	0	0
Com/Soybeans Uptake (lbs/acre)	142	0	0	0	10	17	50	50	10	5	7	2
TN to percolate (lbs/acre)	-	-	-	-	-	-	-	-	-	3.0	0	0
Percolate										2.0	8.0	-
Precip (in/mo)	2.20	9.70	6.30	5.50	6.10	4.80	8.00	7.00	8.00	5.00	5.30	8.50
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.80	1.90	0.90	0.20
Prec. + Irr. PET Percolate (in/mo)	2.1	9.8	5.6	3.7	5.2	4.7	7.1	4.4	3.1	4.4	4.4	8.3
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-
Total Water (in/mo)	2.1	9.6	5.6	3.7	5.2	4.7	7.1	4.4	3.1	4.4	4.4	8.3
Percolate (Mlbs/acre)	0.48	2.17	1.27	0.84	1.19	1.06	1.62	0.48	1.00	0.70	1.00	1.88
Percolate TN (ppm = mg/l)	-	-	-	-	-	-	-	-	-	4.3	2.0	4.3

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WH-BJ1      YEAR: 2003  
 Field(s) Acreage: 54.53 (Wetted acres)

0.5 inch/week = 740,354 gallons/week = 3,172,945 gallons/month (based on 30 day month)  
 1 inch/week = 1,480,708 gallons/week = 6,345,680 gallons/month (based on 30 day month)  
 1.5 inch/week = 2,221,081 gallons/week = 8,518,835 gallons/month (based on 30 day month)  
 2 inch/week = 2,861,415 gallons/week = 12,691,780 gallons/month (based on 30 day month)  
 2.5 inch/week = 3,701,789 gallons/week = 15,864,725 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mgd)	0	0.9137	2.3065	1.4282	4.1203	0	0.6078	1.228	2.3408	2.8818	0	0.6077
Million Gallons/month												0.9732
Application rate (inches/week)												0.62
Application rate (inches/month)												
WWTP Effluent N												
Ammonia N (mg/l)	0	19.19	21.47	1.41	15.178	14.9875	14.65	9.11	10.97	41.1	0	38.85
Organic N (mg/l)	0	4.44	2.58	3.22	5.548	3.4175	2.73	5.58	5.54	8.07	0	7.25
Nitrate N (mg/l)	0	0.05	0.07	0.0708	0.078	0.06	0.185	0.4	0.55	0.187	0	0.115
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	23.68	24.1	4.708	25	18.485	17.585	15.08	17.08	47.337	0	44.016
WW Reductions												35.08
Ammonia after Volatiz. (mg/l)	0.85	18.2	20.4	1.3	14.4	14.2	13.9	8.7	10.4	39.0	0.0	34.8
TN after Denitrification (mg/l)	0.85	19.3	19.6	3.9	17.0	15.1	14.3	12.4	14.0	38.5	0.0	35.9
TN (lbs)	147	377	47	585	585	73	127	274	274	919		182
Irrigation Water												219
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr. W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-
Additions and UpTake												
TN WW + Irr. W. (lbs/acre)												
TN for plow down (lbs/acre)	25	2.7	6.9	0.9	10.7	-	1.3	2.3	5.0	16.8	-	3.3
TN from fertilizers (lbs/acre)	30	2.7	6.9	0.9	13.7	6.0	9.3	7.3	8.0	16.8	-	15
TN for crop uptake (lbs/acre)												15
Barley Uptake (lbs/acre)	8	0	0	8	0	0	0	0	0	0	0	18.3
Wheat Uptake (lbs/acre)	19	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	195	0	0	0	10	30	33	82	29	11	0	0
TN to percolate (lbs/acre)	27	6.9	-	3.7	-	-	-	-	-	5.8	-	8.3
Percolate												17.0
Precip (in/mo)	2.20	9.70	6.30	5.50	6.10	4.90	8.00	7.00	8.00	5.00	5.30	8.50
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec + In-PET Percolate (in/mo)	2.7	11.2	6.6	8.5	2.8	0.5	3.3	3.7	6.3	3.1	4.8	8.9
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-
Total Water (in/mo)	2.7	11.2	6.6	6.5	2.8	0.5	3.3	3.7	6.3	3.1	4.8	8.9
Percolate (Mlbs/acre)	0.62	2.53	1.49	1.47	0.63	0.12	0.75	0.83	1.43	0.70	1.09	2.02
Percolate TN (ppm = mg/l)	4.4	2.7	-	2.5	-	-	-	-	4.1	-	7.6	2.5

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHB-J2

YEAR: 2003

Field(s) Acreage 65.5 (Wetted acres)

0.5 inch/week = 889.284 gallons/week = 3,811,258 gallons/month (based on 30 day month)  
 1 inch/week = 1,778,587 gallons/week = 7,622,516 gallons/month (based on 30 day month)  
 1.5 inch/week = 2,667,881 gallons/week = 11,433,774 gallons/month (based on 30 day month)  
 2 inch/week = 3,557,174 gallons/week = 15,245,031 gallons/month (based on 30 day month)  
 2.5 inch/week = 4,446,468 gallons/week = 19,056,289 gallons/month (based on 30 day month)

MONTH Days	JAN 31	FEB 28	MAR 31	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	SEP 30	OCT 31	NOV 30	DEC 31
WW Eff. Application Rate (mg/d)	0	1,1811	0.806	1,8944	4,9557	0	1,5729	1,7184	1,8784	3,0163	0	0.7301
WW Eff. Million Gallons/month												1,3272
Application rate (Inches/month)		0.67	0.45	1.07	2.79		0.88	0.97	1.05	1.70		0.41
WWTP Effluent N												0.75
Ammonia N (mg/l)	0	18.19	21.47	1.41	15.178	14,8675	14.85	9.11	10.87	41.1	0	38.65
Organic N (mg/l)	0	4.44	2.56	3.22	5.546	3,4175	2.73	5.58	5.54	6.07	0	7.25
Nitrate N (mg/l)	0	0.05	0.07	0.078	0.078	0.05	0.165	0.4	0.55	0.167	0	0.115
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	22.68	24.1	4.708	20.802	18,4665	17.595	15.09	17.08	47.337	0	44.015
WW Reductions												35.06
Ammonia after Volatiz. (mg/l)	0.95	17.3	20.4	1.3	14.4	14.2	13.9	8.7	10.4	39.0	0.0	34.8
TN after Denitrification (mg/l)	0.85	18.5	19.6	3.9	17.0	15.1	14.3	12.4	14.0	38.5	0.0	35.9
TN (lbs)	184	132	62	704	-	188	178	220	178	969	-	216
Irrigation Water												315
Flow (MG/month)		0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr. W. Reductions												0
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Uptake												4.8
TN WW + Irr. W. (lbs/acre)												3.3
TN for plow down (lbs/acre)	25	2.8	2.0	1.0	10.8	-	2.9	2.7	3.4	14.8	-	17.6
TN from fertilizers (lbs/acre)	30	-	-	3	8	-	8	5	3	-	-	15
TN for crop uptake (lbs/acre)	2.8	2.0	1.0	13.8	6.0	-	10.9	7.7	6.4	14.8	-	18.3
Barley Uptake (lb/acre)	8	0	8	0	0	-	0	0	0	0	0	0
Wheat Uptake (lb/acre)	18	0	0	0	0	-	0	0	0	7	10	2
Com/Soybeans Uptake (lb/acre)	194	0	0	10	30	-	33	80	28	12	0	0
TN to percolate (lb/acre)	2.8	2.0	-	3.8	-	-	-	-	2.8	-	-	8.3
Percolate												8.50
Precip (in/mo)	2.20	9.70	6.30	5.50	8.10	4.80	8.00	7.00	8.00	5.00	5.30	8.50
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec. + Irr.-PET Percolate (in/mo)	2.16	10.1	6.7	6.5	2.8	1.0	3.5	3.2	6.1	3.1	4.8	9.0
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-
Total Water (in/mo)	2.8	10.1	6.7	6.5	2.8	1.0	3.5	3.2	6.1	3.1	4.8	9.0
Percolate (Mlbs/acre)	0.63	2.28	1.51	1.47	0.63	0.22	0.78	0.71	1.38	0.70	1.09	2.05
Percolate TN (ppm = mg/l)	4.5	0.9	-	2.6	-	-	-	-	2.0	-	7.6	8.7

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHBJ3

YEAR: 2003

Field(s) Acreage  
74 (Wetted acres)

0.5 inch/week =	1,004,698 gallons/week =	4,305,849 gallons/month (based on 30 day month)
1 inch/week =	2,009,396 gallons/week =	8,611,697 gallons/month (based on 30 day month)
1.5 inch/week =	3,014,094 gallons/week =	12,917,548 gallons/month (based on 30 day month)
2 inch/week =	4,018,792 gallons/week =	17,223,394 gallons/month (based on 30 day month)
2.5 inch/week =	5,023,490 gallons/week =	21,529,243 gallons/month (based on 30 day month)

MONTH Days	JAN 31	FEB 28	MAR 31	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	SEP 30	OCT 31	NOV 30	DEC 31
WW Eff. Application Rate (mg/l)	0											
Million Gallons/month	3.9883	4.0008	2.7387	2.5453	0.7027	2.9788	5.601	3.6738	2.2888	-	0	2.1521
Application rate (inches/month)	1.98	1.98	1.36	1.36	0.35	1.48	2.78	1.83	1.13	-	-	1.07
WWTP Effluent N												
Ammonia N (mg/l)	0	18.19	21.47	1.41	15.178	14,9975	9.11	10.97	41.1	23.85	38.65	30.85
Organic N (mg/l)	0	4.44	2.56	3.22	5.548	3.4175	5.58	5.54	6.07	8.95	7.25	4.11
Nitrate N (mg/l)	0	0.05	0.07	0.076	0.078	0.06	0.185	0.4	0.55	0.167	0.115	0.11
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	22.68	24.1	4.708	20.802	18,485	17.585	15.09	17.08	47.337	32.975	44.015
WW Reductions												
Ammonia after Volatiz.	0.95	17.3	20.4	1.3	14.4	14.2	13.8	8.7	10.4	39.0	22.8	34.8
TN after Denitrification	0.85	18.5	19.6	3.9	17.0	15.1	14.3	12.4	14.0	38.5	27.0	35.9
TN (lbs)	616	653	90	389	320	84	309	856	1,178	511	-	511
Irrigation Water												
Flow (MG/month)	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
IRR W. Reductions												
Ammonia after Volatiz.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Upake												
TN WW + Irr W. (lbs/acre)	8.3	8.8	1.2	5.3	4.3	1.1	4.2	8.9	15.9	6.9	-	6.9
TN from fertilizers (lbs/acre)	8.3	8.8	1.2	8.3	10.3	9.1	9.2	11.9	15.9	6.9	15	15
TN for crop uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Barley Uptake (lbs/acre)	17	0	0	0	0	0	0	0	0	7	8	2
Wheat Uptake (lbs/acre)	194	0	0	10	30	33	80	28	12	0	0	0
Corn/Soybeans Uptake (lbs/acre)	8.3	8.8	-	-	-	-	-	-	3.9	-	7.0	19.9
TN to percolate (lbs/acre)	-	-	-	-	-	-	-	-	-	-	-	-
Percolate												
Precip (in/mo)	2.20	9.70	6.30	5.50	8.10	4.90	8.00	7.00	8.00	5.00	5.30	8.50
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.60	5.50	4.90	3.60	1.90	0.90	0.20
Prec. + Irr + PET Percolate (in/mo)	4.1	11.6	7.0	5.1	4.1	0.4	4.0	4.9	6.2	4.2	4.4	9.4
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-
Total Water (in/mo)	4.1	11.6	7.0	5.1	4.1	0.4	4.0	4.9	6.2	4.2	4.4	9.4
Percolate (Mlb/acre)	0.93	2.82	1.58	1.15	0.92	0.10	0.90	1.11	1.41	0.96	1.00	2.12
Percolate TN (ppm = mg/l)	9.0	3.4	-	-	-	-	-	-	2.8	-	7.0	9.4

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WH-B4  
YEAR: 2003  
Field(s) Acreage  
92.06 (Wetted acres)

0.5 inch/week = 1,249,899 gallons/week = 5,358,708 gallons/month (based on 30 day month)  
1 inch/week = 2,499,787 gallons/week = 10,713,417 gallons/month (based on 30 day month)  
1.5 inch/week = 3,749,686 gallons/week = 16,070,125 gallons/month (based on 30 day month)  
2 inch/week = 4,989,584 gallons/week = 21,428,833 gallons/month (based on 30 day month)  
2.5 inch/week = 6,249,483 gallons/week = 26,783,542 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mgd)	0	1,0841	4,1844	0,7802	2,4458	1,8122	3,0781	5,7848	2,0857	0	4,1627	4,9235
Million Gallons/month												4,08151
Application rate (Inches/week)												
WWTP Effluent N												
Ammonia N (mg/l)	0	18.19	21.47	1.41	15.178	14,9875	9.11	10.97	3	23.95	38.85	30.95
Organic N (mg/l)	0	4.44	2.58	3.22	5.548	3,4175	5.58	5.54	3	8.85	7.25	4
Nitrate N (mg/l)	0	0.05	0.07	0.078	0.078	0.06	0.185	0.4	0.55	19	0.115	0.11
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	22.68	24.1	4,708	20,802	18,485	17,985	15.98	17.08	25	32.975	44.015
WW Reductions												35.08
Ammonia after Volatiz. (mg/l)	0.95	17.3	20.4	1.3	14.4	14.2	13.9	8.7	10.4	2.8	22.8	34.8
TN after Denitrification (mg/l)	0.85	18.5	19.6	3.9	17.0	15.1	14.3	12.4	14.0	21.1	27.0	35.9
TN (lbs)	187	683	26	348	202	367	600	244	244	938	1,472	970
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Update												
TN (WW + Irr W. (lbs/acre)												
TN from fertilizers (lbs/acre)	13	1.8	7.4	0.3	13.8	14.2	12.0	11.5	5.7	-	10.2	10.5
TN for crop uptake (lbs/acre)												
Barley Uptake (lbs/acre)	25	0	0	8	0	0	0	0	0	0	7	105
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Com/Soybeans Uptake (lbs/acre)	146	0	0	10	20	40	48	20	8	0	0	0
TN to percolate (lbs/acre)											3.2	8.5
Percolate												
Precip (in/mo)	2.20	9.70	6.30	5.50	8.10	4.80	8.00	7.00	8.00	5.00	5.30	6.50
PET (in/mo)	0.10	0.10	0.70	3.30	3.30	5.50	4.90	3.80	1.90	0.90	0.20	0.20
2.5	11.3	5.9	4.7	3.4	1.3	4.8	2.9	4.4	4.8	6.4	9.9	9.9
Irrigation Water (in/mo)											-	-
Total Water (in/mo)	2.5	11.3	5.9	4.7	3.4	1.3	4.8	2.9	4.4	4.8	6.4	9.9
Percolate (Mlbs/acre)	0.57	2.55	1.34	1.06	0.78	0.30	1.08	0.66	1.00	1.08	1.44	2.25
Percolate TN (ppm = mg/l)	3.2	2.9	-	3.8	-	-	-	-	-	3.0	5.5	3.8

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

**FIELD: WHBJ5**

**YEAR: 2003**

**Fields/Acreage** 68.53 (Wetted acres)

0.5 inch/week =	944,009 gallons/week =	4,045,752 gallons/month (based on 30 day month)
1 inch/week =	1,888,018 gallons/week =	8,071,504 gallons/month (based on 30 day month)
1.5 inch/week =	2,832,026 gallons/week =	12,137,256 gallons/month (based on 30 day month)
2 inch/week =	3,776,035 gallons/week =	16,183,008 gallons/month (based on 30 day month)
2.5 inch/week =	4,720,044 gallons/week =	20,228,760 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30	Dec 31
WW Eff. Application Rate (mg/l)	0	2,4291	2,3143	3,5004	0	3,5448	6,1351	9,171	0,3937	0	6,8224	6,1343
Million Gallons/month												
Application rate (Inches/week)												
Application rate (Inches/month)												
WWTP Effluent N												
Ammonia N (mg/l)	0	18.19	21.47	1.41	15.178	14,9875	9.11	10.97	10	23.95	38.85	30.85
Organic N (mg/l)	0	4.44	2.56	3.22	5.548	3,4175	2.73	5.54	5	8.85	7.25	4
Nitrate N (mg/l)	0	0.05	0.07	0.076	0.078	0.075	0.185	0.4	0.55	5	0.115	0.11
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	22.68	24.1	4.708	20,802	18,485	17.585	15.09	17.08	25	32.975	44.015
WW Reductions												
Ammonia after Volatiz. (mg/l)	0.95	17.3	20.4	1.3	14.4	14.2	13.8	8.7	10.4	9.5	22.8	34.8
TN after Denitrification (mg/l)	0.85	18.5	19.6	3.9	17.0	15.1	14.3	12.4	14.0	20.8	27.0	35.9
TN (lbs)	375	378	376	115	445	732	951	48			1,537	1,834
Irrigation Water												
Flow (MG/month)												
Ammonia N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions												
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Uptake												
TN WW + Irr W. (lbs/acre)												
TN from fertilizers (lbs/acre)	13	5.4	5.4	1.7	3	6	8	5	3			
TN for plow down (lbs/acre)												
TN for crop uptake (lbs/acre)	25	5.4	5.4	1.7	10.0	18.4	18.5	18.7	3.7			
Barley Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0
Corn/Soybeans Uptake (lbs/acre)	140	0	0	0	10	20	40	40	20	10	0	0
TN to percolate (lbs/acre)	5.4	5.4	5.4	-	-	-	-	-	-	15.1	18.4	19.0
Percolate												
Precip (in/mo)	2.20	9.70	6.30	5.50	8.10	4.80	8.00	7.00	8.00	5.00	5.30	8.50
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20
Prec. + Irr.-PET Percolate (in/mo)	3.4	10.8	7.5	3.7	4.7	3.3	7.4	2.3	4.4	8.7	7.6	11.6
Irrigation Water (in/mo)												
Total Water (in/mo)	3.4	10.8	7.5	3.7	4.7	3.3	7.4	2.3	4.4	6.7	7.6	11.6
Percolate (N/lb/acre)	0.77	2.45	1.69	0.84	1.06	0.78	1.87	0.52	1.00	1.52	1.73	2.92
Percolate TN (ppm = mg/l)	7.0	2.2	-	-	-	-	-	-	-	9.9	10.8	7.3

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

**FIELD: WH-BJ6**  
**YEAR: 2003**  
**Field(s) Acreage** 65.24 (Wetted acres)

0.5 inch/week = 885.783 gallons/week = 3,796.126 gallons/month (based on 30 day month)  
 1 inch/week = 1,771.527 gallons/week = 7,592.286 gallons/month (based on 30 day month)  
 1.5 inch/week = 2,657.290 gallons/week = 11,388.386 gallons/month (based on 30 day month)  
 2 inch/week = 3,543.054 gallons/week = 15,184.517 gallons/month (based on 30 day month)  
 2.5 inch/week = 4,428.817 gallons/week = 18,980.846 gallons/month (based on 30 day month)

MONTH Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Sep 30	Nov 30	Dec 31	
WW Eff. Application Rate (mg/d)	0	0	0	2,3904	0	3,7708	5,0498	3,6209	4,2804	0,778	3,485	3,8487	2,2851	
Million Gallons/month														
Application rate (Inches/week)														
Application rate (Inches/month)														
WWTP Effluent N														
Ammonia N (mg/l)	0	18.19	21.47	1.41	15,178	14,9975	14,85	9.11	10,97	41.1	23,95	36,65	30,95	
Organic N (mg/l)	0	4.44	2.58	3.22	5,548	3,4175	2.73	5.58	6,07	6,85	7,25	4,11	4	
Nitrate N (mg/l)	0	0.05	0.07	0.078	0,078	0.05	0.185	0.4	0.55	0.187	0.075	0.115	0.11	
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total N (mg/l)	0	22.68	24.1	4,708	20,802	18,485	17,585	15,09	17,08	47,337	32,975	44,015	35,08	
WW Reductions														
Ammonia after Volatiz. (mg/l)	0.95	17.3	20.4	1.3	14.4	14.2	13.9	8.7	10.4	39.0	22.6	34.8	29.4	
TN after Denitrification (mg/l)	0.85	18.5	19.6	3.9	17.0	15.1	14.3	12.4	14.0	38.5	27.0	35.9	28.5	
TN (lbs)														
Irrigation Water														
Flow (MG/month)														
Ammonia N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions														
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)														
Additions and UpTake														
TN WW + Irr W. (lbs/acre)														
TN for plow down (lbs/acre)	25	-	-	1.2	-	7.3	9.2	5.8	7.7	3.8	12.0	17.6	8.3	
TN from fertilizers (lbs/acre)	13	-	-	-	3	6	8	5	3	-	-	-	-	
TN for crop uptake (lbs/acre)	-	-	-	1.2	100	19.3	17.2	10.8	10.7	3.8	12.0	17.6	8.3	
Barley Uptake (lb/acre)	25	0	0	8	0	0	0	0	0	0	7	8	2	
Wheat Uptake (lb/acre)	0	0	0	0	0	0	0	0	0	0	0	0	0	
Com/Soybeans Uptake (lb/acre)	140	0	0	0	10	20	40	40	20	10	0	0	0	
TN to percolate (lb/acre)	-	-	-	-	-	-	-	-	-	-	5.0	9.6	6.3	
Percolate														
Precip (in/mo)	2.20	8.70	6.30	5.50	8.10	4.80	8.00	7.00	8.00	5.00	5.30	8.50		
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.80	0.20		
Prec. + Im-PET Percolate (in/mo)	2.1	9.8	6.9	3.7	4.9	3.0	4.5	4.5	4.8	5.1	6.6	9.6		
Irrigation Water (in/mo)	-	-	-	-	-	-	-	-	-	-	-	-		
Total Water (in/mo)	2.1	9.6	6.9	3.7	4.9	3.0	4.5	4.5	4.8	5.1	6.6	9.6		
Percolate (Mlb/acre)	0.48	2.17	1.57	0.84	1.12	0.87	1.03	1.02	1.02	1.10	1.15	1.49	2.17	
Percolate TN (ppm = mg/l)	-	-	-	-	-	-	-	-	-	4.4	8.5	2.9		

**WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS**

FIELD: WHBJ7

YEAR: 2003

Field(s) Acreage  
188.28 (Wetted acres)

0.5 inch/week = 2,691,776 gallons/week = 11,538,183 gallons/month (based on 30 day month)  
1 inch/week = 5,383,552 gallons/week = 23,072,366 gallons/month (based on 30 day month)  
1.5 inch/week = 8,075,328 gallons/week = 34,908,548 gallons/month (based on 30 day month)  
2 inch/week = 10,767,104 gallons/week = 46,144,732 gallons/month (based on 30 day month)  
2.5 inch/week = 13,458,880 gallons/week = 57,680,915 gallons/month (based on 30 day month)

MONTH Days	2003												Dec. 31
	Jan. 31	Feb. 28	Mar. 31	Apr. 30	May. 31	Jun. 30	Jul. 31	Aug. 31	Sep. 30	Oct. 31	Nov. 30	Dec. 31	
WW Eff. Application Rate (mg/d)	0	15,0521	14,8817	14,5729	13,2745	10,6884	0	4,3625	8,3488	22,5278	8,3988	7,4771	7,9882
Million Gallons/month													
Application rate (inches/month)		2.80	2.76	2.71	2.47	2.02		0.81	1.18	4.18	1.19	1.39	1.49
WWTP Effluent N		0	18.19	21.47	1.41	15.178	14,9875	0	9.11	10.97	41.1	23.85	36.85
Ammonia N (mg/l)	0	4.44	2.56	3.22	5.546	3.4175	0	5.58	5.54	6.07	8.95	7.25	4
Organic N (mg/l)	0	0.05	0.07	0.078	0.078	0.05	0	0.4	0.55	0.167	0.075	0.115	0.11
Nitrate N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total N (mg/l)	0	22.88	24.1	4.708	20.802	18.485	0	15.08	17.08	47.337	32.875	44.015	35.08
WW Reductions													
Ammonia after Volatiz. (mg/l)	0.96	17.3	20.4	1.3	14.4	14.2	0	8.7	10.4	39.0	22.8	34.8	29.4
TN after Denitrification (mg/l)	0.85	18.5	19.6	3.9	17.0	15.1	0	12.4	14.0	38.5	21.0	35.9	28.5
TN (lbs)	2,323	2,428	479	1,856	1,387			453	753	7,231	1,441	2,236	1,900
Irrigation Water													
Flow (MG/month)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia N (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0
Organic N (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0
Nitrate N (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0
Nitrite N (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0
Total N (mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	0
Irr W. Reductions													
Ammonia after Volatiz. (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
TN after Denitrification (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
TN (lbs)	-	-	-	-	-	-	-	-	-	-	-	-	-
Additions and Update													
TN WW + Irr W (lbs/acre)	11.7	12.2	2.4	9.5	9.8		2.3	3.7	39.5	7.3	11.3	9.6	
TN for plow down (lbs/acre)	25	-	3	6	8		5	3					
TN from fertilizers (lbs/acre)	0	11.7	12.2	2.4	12.5	12.9	8.0	7.3	6.7	36.5	7.3	11.3	9.6
TN for crop uptake (lbs/acre)	25	0	0	8	0	0	0	0	0	0	7	8	2
Barley Uptake (lbs/acre)	25	0	0	0	0	0	0	0	0	0	0	0	0
Wheat Uptake (lbs/acre)	0	0	0	0	0	0	0	0	0	0	0	0	0
Com/Soybeans Uptake (lbs/acre)	186	0	0	0	0	0	0	20	70	78	18	0	0
TN to percolate (lbs/acre)	11.7	12.2	-	12.5	12.9	-	-	-	-	18.5	0.3	3.3	7.6
Percolate													
Precip (in/mo)	2.20	9.70	6.30	5.50	6.10	4.90	8.00	7.00	8.00	5.00	5.30	8.50	
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	0.1	3.3	4.90	3.60	1.90	0.90	0.20
Prec. + Irr + PET Percolate (in/mo)	4.9	12.4	8.3	6.2	4.8	0.1	3.3	3.3	8.6	4.3	5.8	9.8	
Irrigation Water (in/mo)	4.9	12.4	8.3	6.2	4.8	0.1	3.3	3.3	8.6	4.3	5.8	9.8	
Total Water (in/mo)	1.11	2.80	1.88	1.40	1.09	0.02	0.75	0.74	1.94	0.97	1.31	2.22	
Percolate (Mlb/acre)													
Percolate TN (ppm = mg/l)	10.6	4.4	-	9.0	11.8	-	-	-	9.5	0.3	2.5	3.4	